

# The Mining Journal

## RAILWAY AND COMMERCIAL GAZETTE

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 1700.—Vol. XXXVIII.

LONDON, SATURDAY, MARCH 21, 1868.

{ STAMPED ...SIXPENCE,  
UNSTAMPED—FIVEPENCE

### MR. JAMES CROFTS, STOCK AND SHAREBROKER, No. 1, FINCH LANE, CORNHILL.

SUMMER HILL shares, after a large business done in them, are reduced in market value to a price apparently much below their merits, consideration being had to the fact that £10 per share is only equal to £5000 for the entire mine; whilst the reduction has been caused by pressure of a limited number of sellers. It is a mistake to suppose that it has already paid 45s. 6d. per share in dividends, as it continues to promise a very high rate of remuneration. BUYERS at the prices lately ruling should average their shares by purchasing at the reduction in price, the market appearing to be cleared of all eager sellers.

WEST GODOLPHIN are recommended as an INVESTMENT. These shares are now at a moderate price, and the prospects of the mine most encouraging. Dividends will be regularly paid, yielding a high percentage on cost. A limited number of shares for sale at the LOWEST MARKET PRICE.

BUSINESS in ST. BILLY'S SLATE QUARRIES (Pembrokehire).—A valuable report from these extensive quarries has been received, a copy of which can be had on application. The shares are estimated to pay in the course of this year a very large percentage on a small outlay, and those Mr. CROFTS has for sale are peculiarly eligible as an investment in perpetuity, being fully paid-up to 21 per share.

Bankers: National Bank of Scotland, 37, Nicholas-lane, E.C.

**MR. JOHN BUMPUS, 44, THREADNEEDLE STREET,**  
has FOR SALE the following shares, free of commission:—

50 Anglo-Brazil, 10s. 9d.	50 Frontino, 14s.	50 Pestarena, £2 8s. 9d.
25 Bryn Gwlog, 20s. 6d.	15 Gawn, £2 16s.	40 Rossa Grande, 12s. 9d.
10 Chiv. Moor, £6 17s. 6d.	10 Gt. Wheal Vor, £19.	5 Stray Park, £2 1/2.
35 Chontales, £4 8s. 9d.	15 Great Laxey, £17.	20 So. Condurrow, 11s.
50 Chontales Royalty (£5 paid), £2.	25 Gt. No. Laxey, 13s.	35 South Darren, 35s.
50 Carn Breca, 31s. 6d.	10 Gt. No. Down, £1 1/2.	50 South Grenville, 5s. 6d.
50 Carn Camborne, 3s. 6d.	50 G. So. Chiverton, 9s. 6d.	50 W. Godolphin, 23s. 6d.
15 Clifford, £5 18s. 9d.	20 Marke Valley, £3 10 9	20 West Prince of Wales, 9s.
75 Don Pedro, £3 4s.	2 Minera, £18 1/2.	9s.
50 East Caradon, 24s. 9d.	30 New Birch Tor, 15s.	10 West Caradon, £7 1/2.
50 E. Carn Breca, 31s. 6d.	50 New Quebrada, £4	10 Wh. Kitty (Leland), £2 1/2.
20 East Laxey, 8s.	10 North Crofty, £2 12s. 6	30 W. Wh. Kitty, 12s.
10 Frank Mills, 13s. 6d.	50 No. Treskerby, 25s.	

Money advanced on mining shares.

**GUIDE TO INVESTORS.—THE STOCK, SHARE, AND FINANCE REGISTER** for March contains a comprehensive review of the Stock and Share Markets; a list of all the dividends paid in February; a comparative estimate of the profits of the several descriptions of shares; a selection of Investments paying 10 to 19 per cent.; and information for intending investors.—6d. per copy, or 5s. annually, post free.

Published by Mr. BAKER LEE, at his offices, 11, Royal Exchange, London.

### MR. WILLIAM WARD, STOCK AND SHAREDEALER, No. 29, THREADNEEDLE STREET, LONDON, E.C.

**MR. JOHN BATTERS, STOCK AND MINING SHAREBROKER, 13, THROGMORTON STREET, LONDON, E.C.**

**MR. WILLIAM SEWARD, STOCK AND MINING SHAREBROKER, 19, THROGMORTON STREET, LONDON, E.C.**  
Every description of shares BOUGHT and SOLD at the best market price.

**MR. THOMAS SPARGO, STOCK AND SHAREDEALER, 224 & 225, GRESHAM HOUSE, OLD BROAD STREET, LONDON, E.C.**

**MR. J. B. REYNOLDS, 70 and 71, BISHOPSGATE STREET WITHIN, LONDON, E.C.**  
Established Eleven years. Bankers: City Bank.

Mr. REYNOLDS has BUSINESS in the undermentioned properties, at prices highly advantageous to buyers:—Wheal Kitty (St. Agnes), Rose and Chiverton United, Prince of Wales, West St. Ives, West Wheal Kitty, Chontales, Chiverton Moor, Colquhoun and Callington, Wheal Kitty (Leland).

**MESSRS. POWELL AND MOSS, SHAREDEALERS, 78, OLD BROAD STREET, LONDON, E.C., and Mining Exchange.**  
have large transactions in Prince of Wales, North Treskerby, Frontino, North Crofty, Chiverton, Chiverton Moor, and West Chiverton. Parties dealt with at a fair margin on the market price.

References exchanged.  
Bankers: City Bank, Finch Lane.

**JOHN RISLEY, (SWORN) STOCK AND SHAREBROKER, 48, THREADNEEDLE STREET, LONDON, E.C.**  
Business transacted in the British Funds, Railway and other Stocks, Foreign Bonds, &c., on the best terms, and there is nothing now to prevent Thompson's share going on in a regular course of sinking. This is the main point on which the future prosperity of the mine depends.

At ENURY, the captain being finished, they have commenced driving west and east of the shaft, in a poor lode for lead.

EAST SNAFFELL is continuing to look well, the lode in the shaft being worth 1 ton of ore to the fathom, and promising well for the future.

The different points of operation at CENTRAL SNAFFELL are being energetically carried on; and a winze has been set to sink through the ore ground, and will go down simultaneously with the shaft. Capt. Kitto calculates to reach the next level (the 130) in about six months.

These mines, being worked simply as legitimate speculation only, I can with confidence recommend the purchase of the shares.

Bankers: London and Westminster, Lothbury.

**MR. THOMAS THOMPSON, MINING OFFICES, 12, OLD JEWRY CHAMBERS, LONDON, E.C.**  
The slopes are improving at WESTMINSTER, and there is nothing now to prevent Thompson's share going on in a regular course of sinking. This is the main point on which the future prosperity of the mine depends.

At ENURY, the captain being finished, they have commenced driving west and east of the shaft, in a poor lode for lead.

EAST SNAFFELL is continuing to look well, the lode in the shaft being worth 1 ton of ore to the fathom, and promising well for the future.

The different points of operation at CENTRAL SNAFFELL are being energetically carried on; and a winze has been set to sink through the ore ground, and will go down simultaneously with the shaft. Capt. Kitto calculates to reach the next level (the 130) in about six months.

These mines, being worked simply as legitimate speculation only, I can with confidence recommend the purchase of the shares.

Bankers: London and Westminster, Lothbury.

**MR. G. D. SANDY, STOCK AND SHAREDEALER, No. 48, THREADNEEDLE STREET, LONDON, E.C., TRANSACTS BUSINESS IN EVERY DESCRIPTION OF STOCK EXCHANGE SECURITIES, MINING AND FINANCIAL ENTERPRISES, at close market prices.**  
Correct Daily Price List can be had on application.  
Money advanced to any amount on legitimate stocks and shares.  
References exchanged.

**MR. HENRY MANSELL, STOCK AND SHAREDEALER, No. 44, THREADNEEDLE STREET, LONDON, E.C.**  
References Exchanged.—Member of the Mining Exchange.  
Bankers: London Joint-Stock Bank.

**MR. WILLIAM MARLBOROUGH, 1, GREAT ST. HELEN'S, BISHOPSGATE STREET, LONDON, E.C. (Established 13 years), has FOR SALE the FOLLOWING SHARES, at net prices:—**

25 Anglo-Brazil, 10s. 9d.	40 Frontino, 14s.	20 S. Herodfoot, 20s. 3d.
15 Chiverton, £3 1s. 3d.	25 Great So. Tolgus, 17s.	30 Summer Hill, £6 1/4.
10 Chiv. Moor, £6 16s. 3d.	15 Gt. Retalack, £2 13 9	30 Tamar Valley, 14s.
15 Clifford, 26s.	10 Gt. Chiverton, £14 3s. 9d.	10 Tincroft, £14 3s. 9d.
3 Carn Breca, £18 1/2.	40 Gt. Chiverton (Clitters), 30s.	40 W. Drake Walls, 10s.
15 Don Pedro, £2 1/2 pm.	5 Gt. Wh. Vor, £18 1/2.	5 West Caradon, £2 16 3
30 Drake Walls, 10s. 6d.	10 Marke Valley, £3 12s.	10 W. Gt. Work, £3 1s. 3d.
5 East Basset, £10 1/4.	10 North Roskear, £10 1/2.	45 Wh. Grenville, 31s. 3d.
20 E. Carn Breca, £1 13 9	20 North Crofty, £2 1/2.	30 Wheal Croft, 9s. 9d.
12 E. Grenville, £1 13 9	35 Prince of Wales, 5s.	15 Wheal Ury, 3s.
5 East Lovell, £3 18s. 9d.	40 So. Condurrow, 9s.	4 Wheal Buller, £10 1/2.
25 East Russell, 24s. 6d.	5 St. John del Rey, £18 1/2.	3 Wh. Trelawny, £2 1/2.
10 E. Caradon, £3 16s. 3d.	15 South Darren, 35s.	1 Wheal Seton, £2 1/2.
40 East Rosewarne, 6s.	3 So. Frances, £2 1/2.	

**MR. GEORGE BUDGE, STOCK AND SHAREDEALER, No. 4, ROYAL EXCHANGE BUILDINGS, LONDON, E.C. (Established 19 years), has FOR SALE at net prices:—**

20 Gawton, £2 1/2	125 West St. Ives, 5s. 10 1/2 d.	2 Wheal Seton, £90
50 Colquhoun and Callington United, 32s. 9d.	3 West Frances, £36	40 Wheal Croft, 4s.
30 South Herodfoot, 13s. 9d.	30 West Wheal Kitty, 9s. 6d.	60 Prince of Wales, 35
30 South Herodfoot, 13s. 9d.	40 East Gt. Chiverton, £14 3s. 9d.	10 Chifford, £2 1/2
70 Great South Chiverton, 14s.	40 Old Westminster, 140 Redmoor, 3s. 6d.	30 Frontino, 13s. 9d.
35 Great South Tolgus, 15s.	10 Maes-y-Safn, £28 1/2	10 Anglo-Brazilian, 9s. 9d.
20 West Drake Walls, 10s.	100 Lovell Consols, 9s.	50 New Crow Hill, 12s.
60 New Quebrada, 10 Summer Hill, 10	10 Tamar Valley, 14s.	5 Wheal Emily Henrietta, 10
10 Rose and Chiverton, 1 Minera, 100	100 Anglo-Italian, 13s.	15 Linares, £2 1/2
100 Rossa Grande, 12s. 9d.	70 North Downs, 19s.	50 Cape Copper,

### CORNWALL AND DEVON MINES.— PETER WATSON'S "WEEKLY MINING CIRCULAR AND SHARE LIST— SYNOPSIS OF CORNISH AND DEVON MINES." of Friday, March 20, No. 471.

Vol. X., price 6d. each copy, forwarded on application, contains information on the following mines:—  
Great Wheal Vor. New Wheal Lovell. Wheal Mary Ann.  
Prince of Wales. Wheal Trelawny. Chontales.  
With Remarks on the Tin Trade, Mining Share Markets, Advances in the Tin Standard, &c.

**THE LONDON DAILY RECORD—STOCK AND SHARE LIST—STOCK EXCHANGE SECURITIES.** Published every evening at 5 o'clock. It contains the latest prices of railways, banks, mines, foreign stocks and bonds, financial, insurance, and miscellaneous shares, remarks on the daily rise and fall in prices, with advice as to purchase and sales. Annual subscription, £1 1s.; by post, £2 5s.; monthly subscription—by post, 4s.; single copy, 1d.; by post, 2d.

PETER WATSON, Stock and Sharedealer, 79, Old Broad-street, London.

**INVESTMENT OR SPECULATION.—A SELECTED LIST OF RAILWAYS, BANKS, MINES, COLONIAL SECURITIES, FOREIGN GOVERNMENT BONDS, &c., forwarded to bona fide investors on application, in addition to the high rate of interest many of the above are paying, there is now every probability of a great rise in market value.**

PETER WATSON, STOCK AND SHAREDEALER, 79, OLD BROAD STREET, LONDON.  
(three doors only from Hercules-passage, entrance to the Stock Exchange)  
Twenty-three years' experience.  
(Two in Cornwall and Twenty-one in London.)  
Bankers: The Alliance Bank, and the Union Bank of London.  
References given and required (when necessary) in all the principal towns of the United Kingdom.

**MR. EDWARD COOKE, STOCK AND SHAREDEALER, 76, OLD BROAD STREET, LONDON, E.C.**  
The following mines dealt in at close market prices:—East Lovell, Great Wheal Vor, Prince of Wales, West Drake Walls, West Caradon, North Wheal Chiverton, Carn Breca, Frank Mills, Calbeck Fells, North Treskerby, New Wheal Lovell, West Chiverton, Trelawny, West Kitty, East Carn Breca, Wheal Seton, North Downs, Clifford Amalgamated, and Trumpet Consols.  
BUYERS or SELLERS of the above will find it to their advantage to apply to Mr. COOKE.  
Satisfactory references given in any town in the United Kingdom.  
Bankers: Alliance Bank.

**MR. W. H. CUELLO, (late of the firm of WATSON AND CUELLO), Has REMOVED TO 42, CORNHILL, LONDON, E.C.**

**GEORGE RICE, STOCK AND SHAREDEALER, 78, OLD BROAD STREET, LONDON, E.C. (Member of the Mining Exchange), (25 years' experience), TRANSACTS BUSINESS IN MINING SHARES, at close prices. Money advanced on mining shares.**  
March 20, 1868. Bankers: Bank of England.

**JOHN WILLIAM HUTCHINSON**  
has Instructions to SELL at cash net prices:—

25 Chontales, £4 1/2.	15 Gawn, £2 16s.	25 Prince of Wales, 55s.
10 Carnarvon, Con, £3 1/2.	15 North Crofty, £2 1/2.	15 South Darren, 35s.
10 Chiverton Moor, £6 1/2.	20 No. Treskerby, 25s. 3d.	25 Tamar Valley, 14s. 6d.
20 East Russell, 24s.	10 North Crofty, £2 1/2.	10 Wh. Grenville, 31s. 3d.
10 Gt. No. Down, £1 1/2.	5 Prosper Unit, 17s. 6d.	50 W. Drake Walls, 10s. 6d.

Parties, by applying to the above, may readily dispose of shares where a difficulty may be experienced in finding buyers through other sources.  
OFFICES—31, THROGMORTON STREET, LONDON, E.C.  
Established 1852.

**MR. JAMES HUME, STOCK AND SHAREDEALER, 74, OLD BROAD STREET, LONDON, and MINING EXCHANGE.**  
Transacts BUSINESS in Railway and Mine shares at closest market prices, and at margins of 1/2 and 1 1/2 per cent. respectively.  
Every description of shares BOUGHT and SOLD for cash or account.  
EAST CHIVERTON MINE.—Full particulars of this most promising young mine will be supplied on application to Mr. HUME.  
Mr. J. HUME'S "Circular" for March, price 6d., now ready.  
Bankers: The London Joint-Stock.

**MR. R. EMERSON, 28, GREAT WINCHESTER STREET, LONDON, E.C., has the following SHARES FOR SALE:—**

50 Wheal Croft, 4s.	50 Brookwood, 100 West St. Ives, 25 Lovell Consols, 50 Budnick Consols, 30 Colquhoun and Callington United, 5 Wheal Emma, 20 Wheal Kitty, 15 Wheal Emily, 10 North Treskerby, 10 Rose and Chiverton United, 20 West Godolphin, 100 East Basset, 100 East Russell, 100 East Caradon, 100 East Laxey, 100 East Rosewarne, 100 East Snaffell, 100 East Trelawny, 100 East Ury, 100 East Verrill, 100 East Werrill, 100 East Yerrill, 100 East Zerrill, 100 East Aerrill, 100 East Berrill, 100 East Cerrill, 100 East Derrill, 100 East Eerrill, 100 East Ferrill, 100 East Gerrill, 100 East Herrill, 100 East Ierrill, 100 East Jerrill, 100 East Kerrill, 100 East Lerrill, 100 East Merrill, 100 East Nerrill, 100 East Oerrill, 100 East Perrill, 100 East Qerrill, 100 East Rerrill, 100 East Serrill, 100 East Terrill, 100 East Uerrill, 100 East Verrill, 100 East Werrill, 100 East Xerrill, 100 East Yerrill, 100 East Zerrill, 100 East Aerrill, 100 East Berrill, 100 East Cerrill, 100 East Derrill, 100 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## Original Correspondence.

## TECHNICAL EDUCATION.

SIR,—To say that the all-important question of Education is in the ascendant may appear a trite remark, but to those who have long watched, and done their best through many discouragements to give it prominence, it may be permitted. To such it is but natural to look back, and to measure the elevation the question has attained, to glance at its history, at the circuitous course it has travelled, and to regard the achievement as a fitting reward for long years of patient labour. Poets, theologians, and statesmen have never failed to regard it as an agency specially designed by Providence for the improvement and elevation of mankind, yet it never before stood forward so pregnant with meaning as at present, nor was it ever aided towards its accomplishment by influences such as now surround it. Nor is it the advocates of improved systems of primary instruction only who have good reason to congratulate themselves; those also who have hitherto lamented the lack of suitable preparatory education for such of our youth as are destined to take part in the industrial pursuits of the country have no less grounds for encouragement, when taking into account the present state of the question. It is with the latter phase more particularly—that is, with the efforts now being made to establish some practical system of instruction, which shall have a tendency to develop the faculties of the young for the fulfilment of those special duties and pursuits to which they might be directed, that we now propose to deal.

The changes wrought by science and civilisation render just now some such training essential for fitting the rising generation for the several spheres of useful labour in which, in all probability, they will be employed in after life. The perfection to which human industry has been brought in this country, and the admitted superior enlightenment of our rivals on the Continent, not only render it imperative that we provide a wider and sounder basis of general instruction, but also that we lose no time in building upon it such special culture as will fit the child for that line of life which he might choose, or which his parents and friends might choose for him. With regard to primary education and general culture, there can be no doubt but that much more might be done, even in the same space of time, by improved educational methods or machinery. Indeed, the conference of school-teachers, held a week or two ago, at the rooms of the Social Science Association, London, brought out the important fact "that by well-organised methods of teaching, by fuller classes, and by divisions of educational labour amongst graduations of skilled teachers and pupil teachers, elementary education may be given in from one-third to one-half less time, together with physical training, at one-third less expense than can be given to children in small numbers, and with small classes under single teachers;" also "that by the improved methods of school-teaching, which have been in operation many years, advanced elementary instruction, such as is commonly considered to require school attendance up to the 13th and 14th year, and does require it in small schools, under single teachers, may be imparted satisfactorily before the end of the 11th year. This is a most important discovery, and is a great step gained; let this be accomplished, let but a good foundation be laid by general training in a third less time than at present, and let boys destined to go out into this work-day world to engage in its busy pursuits have their attention turned in that direction, and their minds stored with such information as will enable them, with the greatest economy of effort, to carry out their designs, and we shall at once raise the character of the artisan and of his productions.

In pursuits and professions, in which by common consent it has been admitted great strain is put upon the mental powers, our ancestors wisely adopted the system of giving special instruction; and in the professions of law and medicine, in the pursuits of architecture and engineering, a preparatory education for special subjects was considered indispensable; and such is now the competition, and such the need for improved and economical methods of working in all branches of trade, that something of the kind has become absolutely necessary in all departments where any kind of labour at all above that merely mechanical is in demand, if the labour itself is to be at all agreeable and profitable to the men, or of advantage to the public. The state of our mining population in point of education has long been a disgrace, and a constant source of danger. We have not only an uneducated population in the mines, but the educated portion, the foremen and bailiffs under whose direction they prosecute their tasks, is exceedingly small. The consequences are undoubted and irremediable loss to the country of much of that rich mineral treasure which has placed it at the head of the commercial nations of the world, those fearful sacrifices of useful lives which so often occur, and those losses to the community which so frequently happen from misunderstandings and strikes, which latter one can scarcely imagine to take place, or at any rate not to the same extent as at present, with a better educated class of workmen. Whatever may be the precautions taken, or however strict the rules adopted by Parliament, proprietors, or inspectors, as long as the miner continues the same listless and unenlightened piece of animated machinery he often is at present, he will continue to set such regulations at defiance, although he and his family may be the first to suffer. In those deep large mines, considered to be the most dangerous in the kingdom, from the large quantities of ignitable gas given off, where it is absolutely necessary to employ the best talent at command, in order to prevent even a more frequent occurrence of those calamities which every now and then send a thrill of horror through the nation, and create great losses to the proprietors, complaints are frequent of the stolid indifference of the men, of the difficulty of getting them to adopt precautionary measures, and of enforcing a discipline necessary for the safety of life and property. These men are sent into the mine when boys without any training for their work, there is no apprenticeship or preparatory instruction for the task they have to perform when they become men; the consequences they rarely rise above the level of mere machines, and they readily become the dupes of those knowing a little more than themselves, who may find it to their interest to flatter and make tools of them. It is not so in other countries, inferior in many ways to our own.

The readers of the *Mining Journal* may remember a description in the report by Mr. Warington Smyth, M.A., of the Apparatus and Processes of the Art of Metallurgy, in connection with the Paris Exhibition, which appeared in the *Journal* of October 12. He says—"As far as I have had the opportunity of forming an opinion, the working colliers are generally inferior to ours in working energy, but superior in steadiness; and a great part of the credit for the present active and intelligent conduct of the French coal trade is due to the excellent technical training received by the superior officers and managers at the schools at Paris." And there is no question but that any amount of assistance which proprietors of mines might be called upon to give to Government in carrying out an efficient scheme of special instruction would be paid back to them by that true economy in the working of mines which is now sometimes sought to be effected by more questionable means. On the Continent the proprietors of mines evidently find it so, as shown by the reports of those who, taking deep interest in the subject, visited and made careful inspection of foreign works similar to those in England. One of the more talented of these gentlemen (Mr. Samuelson, M.P.), speaking of Westphalia, where mining is carried on with, probably, more success than in any other district on the Continent, says—"What they do there is this: if a man working underground has shown superior aptitude they take him out of the pit and send him to school for two years. They teach him surveying, the elements of mathematics, the chemistry of the substances with which he has to deal, and they fit him in every respect not only to direct, but also to be an example to the miners out of whose ranks he has been taken. These men form a link between the workmen and the technical engineer, a link which with us is entirely wanting, because our foremen are entirely uneducated." With such knowledge of the advantages placed in the hands of the miner in foreign countries, with a knowledge, too, that such advantages have led to such an advancement in mining and metallurgy, that our rivals whose success we had underrated are found to be fully abreast of, and in some respects greatly in advance of us, we shall be highly culpable if we do not hasten to apply the best remedy the case requires.

The School of Mines, Jermyn-street, is a capital institution, so far

as it goes, but how few receive any benefit from it. What is wanted is an institution, similar to that of Jermyn-street, in the centre of every mining district in the kingdom. The School of Mines in Jermyn-street is a modern institution. Germany, on the contrary, has a Mining College at Freiberg, which, but for the war last summer, would have celebrated with great éclat its hundredth anniversary; and the library, mineral collections, models, and apparatus of which have been valued at 20,000*l*. A work has been published in commemoration of this anniversary, containing articles by some of the professors and students, one of which, by Dr. Scheerer, Councillor of Mines, on "Mining Studies," shows the effects the school has had upon mining generally; also the influence which the study of mining, as pursued at Freiberg, has upon a man's moral, social, and political character. In the list of names of Englishmen who studied there occurs James Watt, of Birmingham. Suppose such a college to have existed in the centre of the mining district of South Staffordshire, either for the same length of time or for half that period, can anyone imagine possible a defective state of mining, resulting in waste of property and loss of life, such as that complained of by Dr. Percy, W. W. Smyth, M.A., J. Beete Jukes, Esq., and others? Yet what more easy than the establishment of such colleges; there is wealth enough, even looking at the matter as one of local enterprise, and a museum attached would soon become stored by contributions from the neighbourhood, and duplicates which might be spared from Jermyn-street. Copies of maps and apparatus might also be stored there, and lectures might be given on mining instead of in London, where few feel an interest in them, and scarcely anyone goes to hear. The institutions for technical instruction in Germany are State institutions, and we see no reason why they should not be so here, but aided at the same time by local efforts.

J. RANDALL, F.G.S.

## TECHNICAL EDUCATION IN WALES.

SIR,—An able and eloquent address has been delivered at the Temperance Hall, Merthyr Tydvil, by Mr. Buckmaster, F.C.S., on Art and Industrial Education, and the facilities afforded by the South Kensington Museum for its promotion. Mr. Buckmaster proceeded to show how the study of art and science by the operative and mechanic tended to strengthen and beautify the mind, and that theory added to practice led to many useful and interesting discoveries—this part of the lecture he very vividly illustrated by diagrams, fully explaining how theory led the mechanic to more fully comprehend the object, or "the why and wherefore," of what he does; and as evidence that his calling rested on certain bases and conditions, he related many amusing and ludicrous anecdotes. He had at various times enquired of skilled workmen for the reason of certain processes producing certain results, but the only reason these untheoretical workmen could assign was that it was so, and that it must be so, comprehending no physical law to account for the conditions. The lecture was evidently simplified to suit the meagre capacity, for Mr. Buckmaster made it so lucid and free from technicalities that any unlettered mechanic or operative must have felt the full force of the remarks, and that they were intended to benefit him. The sum and substance of the lecture was this: that the more scientific education of working men would help them forward in all ways; it would give them a better insight into the processes of the various trades and callings, would enable them to further economise their labour, and to invent new and improved systems. The skilled workman, he said, is he who brings the greatest amount of science, however acquired, to the business of his calling, for it is not mere strength that assists the man, but skill, which is real practical science. Only get the workman to become a man of thought, and many of our unfortunates will present themselves to his mind as food for contemplation, so as eventually to lead him to become a benefactor of his species. It is not mere literary culture that is so much needed, but habits of reflection; and thoughtfulness and method in doing things even the most simple in accordance with the laws of nature. Many of the most eminent and distinguished of scientific men have sprung from the ranks of the poor and laborious—it is diligent purpose mainly that is required to make art and science popular and applicable to the conditions of men. The lecturer observed, in explaining the conditions upon which the majority of the audience consisted of those who had neither taste nor sympathy for his remarks; this, however, is quite in accordance with the usual method of treating working men in Wales—there is so much class distinction and prejudice that the chance of any real working man, however enlightened, being heard upon the subject I have treated upon is but very small indeed. This acts as one of the principal drawbacks to the working man, and is the reason why he keeps so aloof from those objects which the Government of his country, or the majority of the audience, would have him to acquire.

It was announced that the chair would be taken by Mr. G. T. Clark, but a gentleman is high sheriff this year, and consequently had to attend the County Assizes, he was unavoidably absent. I had hoped, seeing his name connected with the meeting, that our ironmasters were going to establish schools in connection with their works, and based on technical teaching, but in this connection I have unfortunately been mistaken, for it appears that it was in consequence of questions put to Mr. Breese and Mr. Henry Richards touching this matter that the tradespeople of Merthyr were induced to solicit the attendance of Mr. Buckmaster at this place. I attempted to read to the meeting a short paper written by myself on the loss attending the appointment of incompetent ironworkers to highly responsible positions in connection with the iron manufacture, without even being able to comprehend the importance of the same in either a technical or practical sense; but here again was unprofitable, for my lecture, and the majority of the audience consisted of those who had neither taste nor sympathy for my remarks; this, however, is quite in accordance with the usual method of treating working men in Wales—there is so much class distinction and prejudice that the chance of any real working man, however enlightened, being heard upon the subject I have treated upon is but very small indeed. This acts as one of the principal drawbacks to the working man, and is the reason why he keeps so aloof from those objects which the Government of his country, or the majority of the audience, would have him to acquire.

In order to make Art education of some value in that district, the masters must lead the van by at once establishing these schools in connection with their works, for it is quite evident that if we wish to compete with the continental nations our workpeople must be raised to the same standard in practical knowledge and in elementary training appertaining to other matters. Brute force has been weighed in the balance, and found wanting. In South Wales I should have said, and in the north of France, Belgium, and Germany extending their trade in steel and iron nearly 400 per cent. during the last ten years must have some influence upon the actions and decisions of our employers in this district; but how they think to obtain the requisite standard of intelligence from the workpeople whilst there is a continuance of the old system of things is a question far beyond my humble comprehension—even the agriculturist is ahead of the ironworker, for farmers find it to their interest to grant prizes and premiums for both competent ploughmen and for the terms of servitude of their workpeople. *Pennylarren, Merthyr, March 16.*

BENJAMIN ROGERS.

## COLLIERY WORKING IN SCOTLAND.

SIR,—Your truth-loving Correspondent of Scotland has stated, in a form that cannot be misunderstood, that I had advised certain parties in Fife to go to America. The statement is a pure fiction from that not very fertile brain of your Correspondent. He ventures to ask me in last week's *Journal* what I think men should get if the coal be selling at 3*s*. 2*d*. per ton? My answer to what I have no doubt your lively Correspondent deems a perfect poser, is as much as ever they can obtain by an honest and upright combination. But on no account to have recourse to such mean, low dodges as trying to truck the employers as they do the men. To resort to no such mean, low acts as "poundage," that was also mentioned in last week's *Journal* by "One that Knows" only a little. To get as much as ever they can; but not on any account to blow their employers into eternity by explosions that they may gain a large wage, though the employers do so arrange things that they not unfrequently blow their men into another existence in the pursuit of large profits. I will not advise the men either to rob their employers by using false weights, or no weights at all, in order that they may get a larger sum for their work, though the employers often do so to the workmen that they may increase their profits. As you gave the misstatement of your Correspondent a place, and the question above answered a place, I trust you will likewise do me the justice of giving this a place in reply.—*London, March 16.*

ALEXANDER McDONALD,  
President, Miners' National Association.

## TREATMENT OF POOR COPPER ORES.

SIR,—This very important subject has been during two successive weeks brought prominently forward in the *Mining Journal*. The week before last, in an obscure and very indistinct manner, a notice of Mr. Henderson's pretensions, or claims, and in last week's *Journal*, in the very able letter signed "Poor Copper Ores." The immense importance of this subject at the present time to Cornwall, Ireland, and our home mines, producing nothing but poor copper ores, cannot be over estimated, and its importance also to the alkali trade, who are now large purchasers of poor copper ores, must be my apology for trespassing upon your valuable space. Within the last seven or eight years I have given much attention to the economical treatment of poor copper ores, and have made myself acquainted, theoretically and practically, with all the different processes proposed for extracting the copper contained in the burnt ores produced so very extensively in our manufacture, and I may say I am well acquainted with all their merits, or I should rather say their demerits. I cannot say that I entirely agree with "Poor Copper Ores" in all he says of Mr. Henderson's process. His facts are wrong when he asserts that the muffle or close furnaces and condensers have been abandoned by his licensees, for I know for a fact that in a new works in course of erection near me both of

these are retained. I mention this, Sir, not to show that I differ from "Poor Copper Ores," but to impress upon him that in a legal and technical struggle, such as is evidently approaching, practical and scientific men should not be carried away by a vein of detraction from the realms of pure facts; and from "Poor Copper Ores" I am satisfied that such was not his intention. But it is absolutely necessary in Law as well as in Science that no assumptions be permitted. Your correspondent would, therefore, render a great service to the cause in which he has declared himself a volunteer, and which he has undertaken from a sense of duty to the public, if he would state how, when, where, and under what circumstances he assisted more than 20 years ago in working out, on a commercially successful scale, the complete separation of copper from the burnt ores, which are produced so largely in my trade. To satisfy everyone, it would be well for him also to state the reasons that combined, or the circumstances not under control, which have apparently operated to extinguish this process. For the purposes of those who have had "the courage" to challenge Mr. Henderson's patent it is not necessary to go back 20 years, as his patent is only dated 1859. If your correspondent, therefore, can prove that "the very same process" was worked commercially and successfully even 10 years ago it will be quite sufficient for those who have made up their minds to try to break down this monopoly. I trust, therefore, that your correspondent will, in next week's *Journal*, give us those precise facts and figures we so much require.

Liverpool, March 18.

ALKALI.

## MINING IN CALIFORNIA.

SIR,—Tuolumne and Calaveras counties are termed the middle mines—the former has a great number of quartz lodes in different parts of the county, and also contains rich deep and surface diggings. Many of the quartz lodes have been worked with considerable advantage by working miners—perhaps six or eight, or even twenty—and rock yielding a small portion of gold remunerates the parties interested. As you are aware, a great number of companies have been launched at different times for working mines in California and Australia, and I may say have generally ended in disaster. I can speak from experience that a great deal of it may be attributed to the large number of useless and inefficient officers sent out as directors and managers, and possibly not one of them having ever had any experience on auriferous lodes, or the kind of machinery required or best adapted for the different kinds of rock that would come under their notice. A man may be a good lead miner, or have worked in Dolcoath or Tincroft all his life; still he is by no means qualified to take charge of a gold mine. I may also remark that a great many persons have an idea that a gold mine that pays working miners would do wonders if a company had it; but no greater error can be imagined. I have seen many worked by Americans, English, and Spanish, who have made money; but let a company embark in them with their string of officers, and they generally end in bankruptcy. To resume my remarks on auriferous lodes and deposits. The large lode worked on by Colonel Frémont, in Mariposa county, can be distinctly traced through Tuolumne county into Calaveras county, and considerable work has been done on it at Carsons Hill, but with no great success; the surface or alluvial deposits were more productive. The principal quartz mines are at Angels' Camp, and also at Vallecitos, on a large lode containing a quantity of sulphurets; but Calaveras has not been a rich quartz-producing county. At Angels some first-rate machinery could be seen, principally on the same plan as is generally used in California. The sand or residue from the stamps has attracted considerable attention, and quartz miners differ very much in opinion as to the best mode of treating it. Some calcine it, whilst others use certain chemicals. I remember seeing some experiments made on the sand with a new style of amalgamator and chemicals to set the gold free. The Mexican arrastra is often used for amalgamating as well as the stone grinders—or, more properly speaking, edge-runners—and with proper care and attention they are good for small quantities.

The Amador Company has been productive in quartz lodes, particularly near the town of Jackson. Some years ago I visited the Heywood Mine, which has been worked extensively, and, I believe, has continued productive in depth. I found the lode large, and strongly charged with sulphurets of iron, &c.; the stratum a soft micaceous slate, which requires careful timbering. The machinery consisted of a splendid battery of stamps, on the revolving principle: notwithstanding that the old-fashioned Cornish stamps does good duty, still I believe many of them will bear favourable comparison with Cornish stamps as to duty, as many of the quartz lodes are nearly as hard as our Cornish tin lodes. A good set of stamps on the revolving principle can be seen at the Prince of Wales Mine, Dolgelly, North Wales. Several kinds of amalgamators are used, amongst others are Knox's patent, which are similar to the ones erected by Mr. Mosheimer at the Vigra and Clogau Mine, and others in Merionethshire, North Wales. The pulverised quartz passes over blankets, washed, and the sand operated on in the amalgamators. There are four short arms or mullers for grinding and working the mercury, for the purpose of amalgamating. I may say that the pan is divided into four compartments, and lined with copper-plate, and washed occasionally with nitric acid. By the continual motion of the arms the amalgam is formed on the plates, which are taken out, scraped, and retorted in the usual way. There are a great many different opinions as to the use of the amalgamators, on account of the small quantity that can be worked, and also the loss of mercury is great, even with the greatest attention. At the celebrated New Almaden Mines I remember seeing mercury that had filtered through the ground for 25 ft. under the bed of the furnace, possibly through the neglect of those in charge, or a defective furnace. In small and rich lodes amalgamators may be used with considerable advantage, but in poor lodes, and where large quantities have to be operated on they are useless. I was surprised some time since, in reading the statements made at the meeting of the Vigra and Clogau Mine, that with a yield only of 1 dw. 18 grs. per ton a profit could be made. I must confess that I cannot understand how it can be done, as, calling it 2 dwts., which barely amounts to 7*s*., then take the cost of extracting the ore, spalling, carriage, reduction, wear and tear of machinery, superintendence, &c. I believe they have the small Hungarian pans there.

Norrteje, Sweden, March 8.

W. HOSKIN.

## ST. JOHN DEL REY MINING COMPANY.

SIR,—Being interested in the re-opening of the St. John del Rey Mine, and seeing that the directors have been in communication with experienced mining engineers in this country, and are prepared to forward suggestions for the consideration of the people on the spot, I would suggest that the directors should be particularly careful not to put too much reliance upon the opinions of mining engineers of this country. I do not say this in disparagement of the home engineers, but I am sure there is more than one at Morro Velho equal to the best man in England that could be found, especially if he have the disadvantage of never having been on the spot. The mining engineers of Cornwall and Devonshire are very competent men in their countries, but the St. John del Rey is altogether an exceptional mine. I consider the best thing to do would be to have nothing more to do with the old excavations, but sink two more shafts in firm ground, which could be done at a small cost. Then tunnel from the shafts below the present excavation, leaving a portion of the present bottom as a roof or penthouse for the future safety of the operators and the mine. To make speedy work of the shafts, they might each of them be worked upon at five or more different points, which is not unusual even in ordinary mining. The old excavation could be used as a convenience from which to reach the lines of the new shafts at various depths, so that sinking and rising might be carried on and the shafts completed in a short time. It may be said that 200 fms. is too great a depth. Not so; the depth matters but very little. Depths, as well as distances, can be shortened by a speedier conveyance, and if the St. John del Rey people go the right way to work the mine can soon be opened from an entirely new point, brought into full operation, and worked 30 per cent. cheaper than before. If the mine from its present entrance is 200 or more fathoms deep the shafts, by taking advantage of the unevenness of the surface, might not be so deep by a good deal. It may be said, too, if the shafts are made away, and at any great distance from the present entrance of the mine, that the stamps will have to be removed. But here, again, I say not so. The great drawing-machine certainly would have to be removed to within a convenient distance of the shafts, and an incline plane could be constructed to raise or lower the produce, as might be required, from the landing-places at the shafts to the present spalling-doors; but the stamps or other machinery might remain where they are. The people at the mine would, doubtless, select a site for the new shafts as low as possible, always keeping clear of any risk of being flooded in the wet season. About nine or ten years ago there was a leakage at the mine, but the damage was soon repaired, and the mine became more productive than ever; and I do think the directors would be wise in getting at least the advice of those who got them out of the difficulty, and who surely would be the most likely people to help them out of their present trouble. Some engineers not acquainted with the mine might



suggest masonry in some way applied as the best means for repairing the damage, but that would not do, nor could masonry ever have done instead of the stulls which were constructed for the safety of the mine.

I beg to apologise for an omission in my letter of March 3. In alluding to the appointment of superintendents of foreign mines I mean a friend not experienced in mining. I do not accuse the directors of any company of doing an intentional wrong.—March 10.

#### THE DARIEN CANAL—No. XIV.

SIR,—The only inhabited place on the line was the village of Su-cubti, population about 70, which was set fire to by the inhabitants, and abandoned upon the approach of Lieut. Strain, United States Navy, on Jan. 25, 1854. When Mr. Gisborne arrived there on Feb. 8, he found nothing but the fragments of some canoes, which had been smashed up to render them useless. The people, probably, removed to Asnati, and it is likely that the place will never be re-occupied, as it was formerly the custom of the Indians to quit for ever any place that had been visited by Spaniards. The only villages within 10 miles of the line were—Aglia, on the Agia-tunati, three miles above its mouth, and Sassari, Asnati, and Moreli, the population of each being about 60. Agia and Sassari were abandoned in 1854 on the arrival of the Darien expedition. The Darien Indians claim that part of the country which extends from Caledonia Harbour to the Chuguanagua, but it is probable that they would cede it in exchange for a part of the coast from Cape San Blas to Portobello, which has now, in an extent of 45 miles, only the hamlets of Culebra, Palenque, and Nombre de Dios, with an aggregate population of 150 negroes, who are descendants of cimarrones, or Spanish maroons, and are only nominally subject to New Granada.

The Darien, San Blas, or Mandinga Indians inhabit the Atlantic coast of Darien, from Boca Tarea, the most western mouth of the Atrato, to Cape San Blas, a distance of 157 miles. They call themselves Tooleh, a word signifying "people." They have always maintained their independence, and do not permit any official or citizen of New Granada to land on their territory; and they never go themselves to the Pacific side of the Isthmus, nor allow any of the natives of the Granadian villages on that side to cross over to the Atlantic. The entire Indian population does not exceed 3000 souls, and the only inhabitants to the south of Darien are 1300 Granadinos, who are negroes, and speak Spanish. Thus, strange to say, there are only 4300 inhabitants, most of whom are savages, in a country 157 miles in length, with an average breadth of 60 miles, having a soil of amazing fertility, capable of yielding the most valuable products, and occupying a most commanding position for commerce, situated, as it is, between the Atlantic and Pacific, with magnificent harbours on each, and at only eight days' distance by steam from New York, and seventeen from England. It seems still more strange when we reflect that the narrowest neck of land between the two oceans is there, and that there also the first settlement was made after the discovery of America—Santa Maria la Antigua del Darien having been the first town built on the American continent. Nevertheless, there is yet neither path, track, trail, nor any way of transit across the Isthmus of Darien. A full account of this very interesting tribe will be found in the "Transactions of the Ethnological Society," just published by Murray.

#### MOSQUITO LAND SECURITIES.

SIR,—May I beg the insertion of the accompanying letter, addressed by me to the President of Nicaragua, Don Fernando Guzman, and which by an oversight was not included in your very able report of the meeting of the Mosquito Land Security holders, held at this office on Thursday last, the 12th inst.

4, Westminster Chambers, Victoria-street, March 17, 1868. BEDFORD PIM.

TO HIS EXCELLENCY DON FERNANDO GUZMAN,

PRESIDENT OF NICARAGUA, ETC.

MOST EXCELLENT SIR,—It becomes my duty, as representative of the Mosquito people, to address you on the subject so long known as the Mosquito question. Having had a large experience in this matter, and being recognised as the warm and proven friend of both Nicaragua and Mosquito, overtures were made to me by the late Government of Nicaragua (just before your Excellency became Chief of the Republic) to smooth the way, and bring about, if possible, the annexation of the Mosquito Reservation, a measure of great importance to Nicaragua, not merely in respect of the acquisition of a large and most desirable section of land, but as a certain means of removing a source of weakness and danger, the Mosquito coast affording a ready means of access to the interior of the Republic for filibusters or other evil-disposed persons. There were weighty reasons why I could not undertake the mission then offered to me, and I was especially influenced in declining the honour from the hope, subsequently realised, that General Martinez would be sent by your Excellency on a special mission to the Government of my country on this subject, as it seemed of the much-wished-for nature that Nicaragua of distinction should pay a visit to London, and, when there, by his active support and countenance of those efforts which I have made with so much personal sacrifice to attract the attention of capitalists to your country, confirm and strengthen the good opinion which I have laboured so long to establish here. After leaving Nicaragua I visited Mosquito, and at Bluefields, in May last, was requested by the Mosquito people in public meeting assembled to act on their behalf, with a view to the satisfactory settlement of the much-vexed questions at issue. I accepted the appointment, because, being a personal friend of General Martinez, I anticipated no difficulty in making an arrangement which, while it would give great satisfaction to Nicaragua, would finally set at rest, in a manner pleasing to all parties, this most troublesome matter. On the arrival of General Martinez in London, I found to my great disappointment that the distinguished gentleman whom I had hoped would have accompanied him, Don Antonio Silva, and whose tact, knowledge of the question, and liberal views would have ensured success, did not form part of the mission. I had, however, the pleasure to show General Martinez and his companions all the public and private hospitality they could wish for, and which I flatter myself has not been exceeded by anyone at any other place they have visited during their absence from home. Nevertheless, nothing could have been more auspicious than its commencement, yet I fear the mission has not succeeded in doing anything towards a solution of the Mosquito question, and that, in fact, the annexation of Mosquito is as far off as ever, for Lord Stanley cannot permit the slightest infringement of the treaty of Managua, and as Americans as well as English are now interested in its maintenance, it will be hopeless to attempt the absorption of the Reservation without their concurrence; for instance, Mr. Morris, of New York, and the writer cannot think of giving up their rights and privileges at Pinar del Rio, and those derived from the Mosquito Reservation, without a proper understanding. Had General Martinez taken my advice, he might have left London, not only with the Mosquito question definitely settled, but have ensured so large an emigration to that shore as would have greatly added to the wealth and strength of the Republic, besides closing the door against designing persons, who are reported to be ready in case the Mosquito people seek their aid to occupy the territory. I allude to the Mormons, located at Salt Lake City, but who for political reasons are thinking of leaving the United States and settling up for themselves, and whom your Excellency is doubtless aware include among their body an army of well armed and drilled soldiers, very nearly approaching in number the total population of Nicaragua. Their occupation of the Mosquito coast would, therefore, mean in reality the occupation of Nicaragua, a proceeding which would be looked upon without the slightest resentment by Europe, while the United States would be only too glad to see so easily rid of a turbulent factor, for ever giving trouble in their midst. I have put these considerations fairly and frankly before your Excellency. You may count upon my support in carrying out any fair and just arrangement which your Government may think proper to propose, but as the representative of the Mosquito people I must defend their rights and privileges at all hazards.

I am, most Excellent Sir, yours very sincerely,

EDWARD PIM,

Representative of the Mosquito People.

Central American Association, 4, Westminster-chambers, London, Jan. 18, 1868.

PETROLEUM AS FUEL.—At the recent meeting of the Polytechnic Branch of the American Institute a patent cooking range was exhibited, which makes use of petroleum of 70° fed from a reservoir. The exhibitor, scoffing the general opinion that petroleum of the kind used was explosive, was particularly anxious to convince his hearers of their mistaken views, and offered to then and there test the truth of his remarks. Several members of the club refused to credit this statement, and pressing the opinion that petroleum emits a gas which is always explosive, which was specially re-affirmed by Dr. Rich, as the result of six months' experiments by a committee of which he was chairman. An experiment in baking bread was made and accomplished in exactly 30 minutes, as had been previously claimed. This form of range has certainly all the merit attributable to convenience and cleanliness, but whether it is as perfectly safe as the exhibitor claimed is a question his hearers seemed to think required further and more conclusive experiments. It is a pity that the gas is not used for fuel, requires no stove-pipe, maintains a regular heat, and is more economical than wood or coal stoves.

LITHOLOGY OF THE BRITISH SEAS.—M. Delesse last week laid before the French Academy of Sciences a large map of the various beds and rocks constituting the bottom of the British sea. This bottom chiefly consists of sand, shingle, or more or less mixed with the latter, and different stones. The latter, already consolidated, are anterior to the present period, and do not receive deposits. They stretch far into the sea from the N.W. coasts of Scotland, the Orkneys, and the Hebrides; they also exist at the mouth of the Shannon and the N.W. coast of Ireland. In the British Channel they mark the junction of Cornwall with Brittany; they also mark those of the Isle of Wight and Portland with the Continent. To the east of England these stony formations are hardly to be met with elsewhere than at the mouth of the Tees and in the direction of Cape Flamborough. They generally form the bottom of the straits and friths that are washed by rapid currents. Shifting deposits are larger in proportion to the rapidity of the waters that have borne them. The most important consist of sand, which occupies immense space on the Atlantic Coast, the Bristol Channel, and the German Sea. Gravel deposits, which are not extensive, are to be found on the western coasts, in the Bristol Channel, between the Land's End and the Scilly Islands, and south of Cork. Flint shingle borders the white cliffs of England, and is also met with in the German Sea in the latitude of the Orkneys. Silty deposits are peculiar to the mouth of the Thames, Southampton Water, and the Irish coast of St. George's Channel. At various points of the coast there are marine deposits of mollusks and shells. They are somewhat rare on the eastern coast of England and the southern one of Ireland, but very frequent in the Irish Sea, and all round Scotland, especially in the Minch, and between the Orkneys and Moray Frith.—Galignani.

LONDON GENERAL OMNIBUS COMPANY.—The traffic receipts for the week ending March 15 amounted to 10,159, 11s. 6d.

HOLLOWAY'S PILLS.—Any dyspeptic sufferer aware of the purifying, regulating, and gently aperient powers of these pills should permit no one to cloud his judgment or to wrap his course. With a box of Holloway's pills, and attention to his accompanying "directions," he may feel thoroughly satisfied that he can safely and effectually relieve himself from his miseries, without impairing his appetite or distressing his digestion. By aiding natural nutrition, this excellent medicine raises the bodily strength to its extreme limits, and banishes a thousand annoying forms of nervous complaints. An occasional resort to Holloway's remedy will prove highly salutary to all persons, whether ill or well, whose digestion is slow or imperfect, usually evidenced by weariness, listlessness, and dependancy.

#### Meetings of Public Companies.

##### DON PEDRO NORTH DEL REY MINING COMPANY.

The sixth ordinary general meeting of shareholders will be held on Monday.

The report of directors (to be submitted) states that the total produce for the year has amounted to 183,711 lbs., which has realised the sum of 79,044, 2s. 9d., and after charging to revenue the entire expenditure of the company (the cost of obtaining additional property adjoining Maquina being alone excepted), the profit on the year's operations amounts to 54,421, 3s. 9d., or up to the end of 1867, the balance of the year 1867 will amount to 13s. per share, or about 92 per cent. upon the paid-up capital of the company. Referring to the detailed reports from Capt. T. Treloar and the mining captains, the directors think it only requisite to draw special attention to two points therein.—Firstly, that the results already obtained strengthen Capt. Treloar in his opinion that far greater results will be realised in the future, as will be seen by the following extract from his report:—"I feel that I have so far explored the signs at Maquina right, I feel that I am only doing my duty by repeating, more or less, what I stated last year—that I have no desire to raise expectations unduly, but that I cannot look upon the great extent of our jactating formations at their elevation and freedom from water, and their almost virgin state, at the character and quantity of gold extracted (182,397 ozs., or 21,045·7 ounces troy, during the last 12 months), and the present position and scale of our own works, without feeling that our prospects are truly magnificent, and that the Don Pedro Company of 1000 purely devoted to rise high in the future. And secondly, that it must be regarded as a highly satisfactory feature in the undertaking that the auriferous ground left in reserve, as the works have been advanced, is estimated by Capt. Treloar at about 44,000 tons, which will, in his opinion, take two years to remove, whilst the reserves are being daily added to as the works are driven forward. After having been over five years in the company's service, Capt. Treloar is about to return to England for a short period to recruit his health. At the expiration of his present agreement with the company, Capt. Treloar had intended remaining in England, but the directors have much satisfaction in stating that he has offered to return to Brazil, and act as consulting engineer to the company. The management of the company during his absence has been entrusted to Mr. Francis S. Symons (upon Capt. Treloar's recommendation), who has been associated with Capt. Treloar for several years. The directors whilst congratulating the proprietors on the success already obtained, feel every confidence from Capt. Treloar's report that even greater results will yet be realised.

The annual report of Capt. Thos. Treloar states that he had much pleasure in forwarding the annual reports for 1866, but still more, in transmitting those for 1867. The result of the operations is much more brilliant, indeed it is such as will, he was sure, be highly gratifying to every well-wisher of the company. But would it were better had the force been adequate to the wants, but it has not. The unfortunate war with Paraguay still continues, and until it is over the hands required will not, he fears, be forthcoming. The gold return is by far the highest yet obtained, the profit magnificent, and, viewed in connection with the cost, it speaks volumes in favour of Jacotinga mines. The monthly gold returns, however, have fluctuated. In one month the produce has been as low as 5318 lbs., in another as high as 29,000 lbs., but, as he had before reported, such variations are characteristic of Jacotinga mines. The returns, therefore, should not cause great depression, nor high ones great excitement. Jacotinga mines of the right sort, when properly wrought, are sure, as a rule, to render a good account to the bona fide proprietors. The success has been derived, again, from the jactating formation at Maquina; and he mentions that it has given a most tangible proof that he has so far read the indications aright, and his belief, therefore, is greatly strengthened that it is a spot of assured promise for the future, and all the gold raised from the mine, up to the date of his report, has been obtained from the third one. But gold will assuredly be found in the other beds; explorations, therefore, are a great desideratum, and during 1868 he hopes more force will be devoted to this interesting and important division of the works. The mine so far as opened is well opened, and adits are in progress for drainage and working in depth. Tram-roads are laid down in all the levels, and an inclined plane follows down the excavations on the lines of the mine, and leads to a level of 200 fathoms below the surface. The vein lode of auriferous run of ground for 24 fathoms at least, measured square with the dip and the lines of gold therein, are well-defined, that each successive bunch of gold in descending has been richer than the previous one, and that water has been an important agent, he cannot but believe that very great deposits of gold will be found in the shoulder. The works on the third bed are 34 fms. from reaching this interesting spot, and it will not surprise him if the outer edge of the great deposits are water be struck simultaneously. The adits, therefore, must be hastened forward, with all convenient dispatch, for besides the necessity of them for drainage, they are first-class explorations. Mining upon all lodes is a venture, and banking companies, railway companies, marine companies, and indeed all commercial enterprises, are more or less a venture, and those who embark their money in them should bear this fact in mind. But when mines are carefully selected, and properly wrought, but few, if indeed any, speculations pay better than mining.

##### WHEEL TRELAUWY MINING COMPANY.

A general meeting of shareholders was held at the offices of the company, Bishopsgate-street Within, on Tuesday.

Mr. W. NICHOLSON in the chair.

Mr. W. J. LIVINGTON (the secretary) read the notice convening the meeting, and the minutes of the last were read and confirmed.

A statement of accounts was submitted, which showed a debit balance of 349l. The reports of the agents were read, as follows:—

March 14.—Trelawny's engine-shaft is down to the 220, according to the time anticipated; the last 10 fms. sunk we turned the shaft, with an incline of 1½ ft. in a fathom, towards the lode; we calculate to have about 8 fathoms to reach the same, and in order that no time may be lost to accomplish this object we have set the men to work on the bottom of the shaft at once, and when they have advanced a few fathoms, so as to be no hindrance to the shaft, we shall resume the sinking, and at the same time cut a trip-plat. We are glad to say the description of the ground is such that seldom or ever lodes fail to be found productive in. The 210, south of the shaft, for the distance driven has been worth from 5l. to 7l. per fathom; in the extreme end we have a hard bar of ground, however it has not influenced in disordering the lode, which is now worth 7l. per fathom, very kindly. We have a winze sinking by the side of the lode in the bottom of the 196 about 6 fathoms in advance of the end, and is down 8 fathoms 3 feet; no time will be lost in hastening down this winze for ventilation, and setting tribute ground. In the 210, north of the shaft, the lode and capel is over 6 ft. wide, producing good stones of ore; the water seems to be on the increase, which we expect will shortly drain the level above, and thus enable us to sink westward in the run of the ground, and we are greatly pleased in our former reports for 60 fathoms in length, worth from 5l. to 80l. per fathom. At Smith's engine-shaft (the 210 north) the lode in the end to-day is presenting a much better appearance than we have seen it for some time past; it seems to be forming a regular lode in the capel, with good stones of ore. A winze sinking by the side of the lode in the bottom of the 196, about 5 fathoms in advance of the end, is down 4 fathoms for ventilation, and proving the lode; in the level above the 196, the lode is improved, opening up a moderate tribute ground. We have of late been putting put a rise in the back of the 196, north of Chippendale's shaft, as well as sinking a winze in the bottom of the 182; by this communication we shall push on the ends more rapidly, and set an additional tribute pitch. We are looking forward for an improvement in driving this end (the 182), seeing we have a long run of ore ground gone down to the bottom of the 182, worth 12l. per fathom. Although our ends at present are not rich, yet still the ore is great, and we are nearly ready for a shoot of ore in the 210, gone down before us in the bottom of the 196, and so far in the same level south the lode has been more productive than in the level above; and that Trelawny's shaft is down to the 220, and we hope to cut the lode in about three months, by which you will perceive we are now in a good position in opening out the mine, and will, in our opinion, ultimately lead to successful results. We sold during the quarter 175 tons of silver-lead ore, realising 3480l., and we shall sample again at our usual time, being the first of the ensuing quarter, from 60 to 70 tons. The engineers are in full course of working, and no doubt the new engine will be set to work in about five weeks from this time, which is very much wanted. We have employed underground on tuck-work and tribute, 206 men; other underground men, including trammers, filers, &c., 25; men, boys, and girls at surface, 132; making the total number of hands employed throughout the mine, 363.—WM. JOHNS, THOMAS GREENFELD, JOHN PRYOR.

March 16.—Since the report has been written of this mine for the meeting to-morrow I have had the opportunity of thoroughly examining the workings of Wheel Mary Ann with one of our agents here, and have much pleasure in saying that we are more than ever convinced that our chances in this mine (Trelawny) are exceedingly encouraging, for this reason—Mary Ann is reported to be 230 fms. in depth, but in reality the measurement is 300 fathoms, thus showing that the extreme bottom of our mine—the 230 fms. level—is only equal to their 180. The ground and lode at both of these points are precisely similar in character and appearance, which is another proof of what I have stated about these levels being equal; and, as Wheel Mary Ann is deepening, the ground is not only considerably easier, but the lode is also very much improving. I would also remind you that they have had at Mary Ann a continuous shoot of ore from surface; but, notwithstanding all this, they have had several poor levels; and had they not persevered with the sinking of their shafts they would certainly not be in the favourable position they are now. Similar remarks are applicable to us, as we had a good shoot of ore nearly from surface, which has lasted down to our 196, with, however, occasional poor levels; but, seeing the present state of Mary Ann, which is about 80 fms. deeper than our workings, we are, I think, quite right in saying that by sinking our shafts we shall yet open a good mine, and which can, I think, be borne out by the remarks referred to.—WM. JOHNS.

The CHAIRMAN moved that the reports be received and entered on the minutes, and that the accounts be passed and allowed.

Mr. PETER WATSON (a member of the committee) thought it necessary to inform the shareholders in explanation of the accounts just rendered that during the past four months there had been incurred a loss of 1080l., and that 120l. had been charged on account of the new engine. At the previous general meeting the question was brought forward with respect to the improper payment of a cheque. The City Bank offered a compromise, which the committee refused; and the bank eventually paid the amount in full. With regard to the application to the lords for a reduction of the dues, he had to inform the shareholders that Mr. Trelawny, with his accustomed liberality, and as Mr. Hony had agreed to give up the dues, provided Dr. Hony agreed to do so, and from what they knew of Dr. Hony there was no reason to anticipate that he would not

readily accede to a proposal the result of which could not fail to be of great pecuniary advantage to the landlords, as it would act as an incentive to the shareholders to vigorously develop the mine.

The CHAIRMAN, in reply to a question, stated it had been suggested to him that the present number of shares should be sub-divided, so as to diffuse them over a greater surface.—Mr. E. COOKE said there would be quite enough shares when the payment of dividends was resumed.

The SECRETARY, in reply to a question, stated that during the current four months the returns would be about the same as they had been during the past four months, and the costs also would be the same, so that the loss would be about 1000l.—The report and accounts were received and passed.

After some discussion with regard to the amount of call, it was unanimously agreed that it should be 15s. per share.

The committee of management were re-elected. A vote of thanks to the Chairman terminated the proceedings.

##### LOVELL CONSOLS MINING COMPANY.

A general meeting of shareholders was held at the offices of the company, 2, Bucklersbury, City, on Tuesday.

Mr. WILLIAM BECK in the chair.

The statement of accounts to the end of Jan., 1868, showed a balance of 164l. 6s. 8d. against the mine.

The following report from the agent was then read:—

March 16.—We have completed the driving of the cross-cut south to Combella lode, and cleared and secured east on the lode 70 fathoms, cleared up three shafts from surface to adit, taken up the pitwork out of the north flat-rod shaft on Combella lode, attached a run of flat-rod shaft from engine to new shaft, and sunk the same 5½ fms. below adit, where the lode has varied in size from 18 in. to 2 ft., and producing some very rich tinstuff, worth from 5l. to 12l. per fathom. In sinking the shaft we have only from 2 to 3 feet of the lode seen in the western end of shaft, as the main cross-course crosses the shaft, and on the eastern side has hove the lode about 6 ft. south of the run of the shaft. We have 145 men sinking at 11l. per fathom. The former workers have taken the lode away from the back of the adit to surface for 30 fms. in length, and have stopped in the bottom of the level as deep as they could by manual labour; therefore, looking at the character of the lode sinking in the west end of the shaft with that of the lode taken away in back and bottom of the adit level, we may reasonably expect to lay open a good run of tin ground as soon as the shaft is sunk to the 12 fms. level, and the lode opened on east and west. The stratum is precisely the same as that of East Lovell and New Lovell, with parallel lodes, and in the same character of ground, and but for the same cross-courses, I can certainly a strong opinion that by a proper development the Combella lode will produce large quantities of tin. Our monthly cost will be comparatively easy, as our engine and pitwork are in thorough working order.—WILLIAM CHAPPELL.

The CHAIRMAN congratulated the shareholders on the large amount of valuable work done for a very small outlay, and the prospects apparent from the agent's report of an early return for the capital, which had been carefully and well invested. He felt great pleasure in moving the adoption of the accounts and report, which being seconded, was unanimously adopted.

Mr. HENRY MANSELL enquired whether there was any prospect of a sale of ore before the date of the next account?—Mr. BARTLETT stated that, although they had made no sale of tin as yet, they had a valuable pile of tinstuff at surface, and would increase it very much during the next three months, but it was not advisable to sell until they had made the necessary arrangements for stamping.—The CHAIRMAN wished to know whether any other lodes had been discovered in the sett in addition to the Combella and Trevenen lodes?—Mr. BARTLETT said that there were eight lodes which had been proved to pass through the sett, being the same that had made the riches of Old Wheal Lovell, Trumpet Consols, and Trevenen Mines, all of which are close to Lovell Consols, and have returned upwards of 1,000,000l. worth of tin. The extensive excavations made by the ancient Cornish miners clearly show that the Lovell Consols sett is traversed by large and rich tin lodes, as immense quantities of tin ground have been taken away above the adit level.

Mr. CHAPMAN stated that for Mr. Bartlett's and his own satisfaction they recently had the mine inspected by one of the best authorities for tin in the county, and he had given it as his opinion that the Combella lode would lay open a valuable course of ore, especially when the 12 fms. level is driven east and west now be 4s. per share, therefore, particularly small.

Mr. MANSELL stated that he had spent a day in examining the mine, and the best evidence he could give of the opinion that he had formed there was that he immediately secured a substantial interest in the property; and by his advice his friends had taken a deep stake in its prosperity. The mine was most economically wrought; the machinery was in good condition; the engine was doing very well; and the shaft was sunk into a mountain, but so low that in order to meet the debit balance, and to carry on the operations, he would propose a call, which he was happy to say did not require to be a large one, and he had no hesitation in believing that it would be cheerfully met by the shareholders; before doing so, however, he deemed it only fair to all the shareholders that they should now know if any important amount of arrears existed from the former calls.

Mr. CHAPMAN replied that only 25l. 16s. now remained due from the last call; and the arrears were, therefore, particularly small.

Mr. MANSELL: The information is most gratifying, as it shows the manner in which the shares are held, and the good opinion of the shareholders. He had, therefore, much satisfaction in moving that a call be now made of 1s. per share.

A SHAREHOLDER enquired the present value of the shares, which he thought should stand high, from the nature of the mine, and by their prospects?—Mr. BARTLETT replied that the amount called up by the present company would now be 4s. per share, but this did not represent the actual amount expended on the property, as upwards of 7000l. had been laid out in the machinery and working by the former company. The shares had brought 10s., and then 12s. 6d., but they were generally held by bona fide investors, who had no intention of parting with them, and very few shares were offered for that reason.

A SHAREHOLDER remarked that they might expect some early day a sudden rise in the shares of East Lovell, the neighbouring mine, which went suddenly up from a few shillings to 20l. or 25l.

Mr. CHAPMAN said that nothing could be more satisfactory than the progress made during the past six months, and it was the opinion of several practical authorities that the present workings on the Combella lode would prove to be highly profitable. The new shaft will be down to the 12 below adit in about two months, and when the level is extended east and west on the course of the lode there will be no loss of time, but a valuable run of the ground will be laid open. This opinion is confirmed by previous workings, as the adit level has been cleared for 40 fms. long, and for 30 fms. a good sample of tin can be broken, whilst in sinking the shaft the lode commenced first at 5l., then went to 7l., next to 10l., and then to 12l. per fathom; and, considering that the adjoining mines have always proved rich at shallow depths, there could not be a doubt but that the same result would be found in this property. He felt great pleasure in meeting the shareholders, and by the result of the meeting he was enabled to report in good faith.

The call of 1s. per share being seconded, was passed unanimously, the CHAIRMAN remarking that the shareholders would all acknowledge their determination to develop the property economically, although he believed efficiently.

A vote of thanks was proposed to and acknowledged by the Chairman; and another to the secretaries, by whose exertions in every respect the company had been brought into its present promising condition.

##### NORTH LEVANT MINING COMPANY.

The half-yearly meeting of adventurers was held at the account-house, St. Just, on March 14.—Mr. SAMUEL HIGGS in the chair.

The notice convening the meeting having been read, and the balance-sheet audited (showing a credit balance of 250l.), the report of the agents was read, as follows:—

March 14.—East Levant: The 115—the bottom level, east of Law's shaft—is driving at 2l. per fm.; lode producing tin throughout, and has a very kindly appearance. There is a winze coming down from the 100 to this level, which will be communicated in about two months; this will ventilate these levels, and the 25 fms. of tin ground standing between them can be taken away to the best advantage. The 100s driving east at 2l. per fm.; lode worth 2l. 10s. per fm.; this level was recently communicated to a winze sunk from the 85, and being now well ventilated, we shall soon increase the number of hands here to take away the 15 fms. of tin ground standing between the two levels. The 100 has been driven west of Law's shaft about 50 fms., and passed through several bunches of tin. We have driven a cross-cut north at this level about 36 fms. to cross several lodes lying in that direction, which have been wrought on at shallow depths. This cross-cut is suspended at present, but will be resumed when the water is in fork at the Stennick part of the mine. The 85 is driving east of Law's shaft at 2l. 2s. per fathom, and is extended about 116 fms. principally through good tin ground. We expect soon to reach the run of tin ground further east, which has been wrought on at shallow levels by the old workers. The winze in the bottom of this level is communicated to the 100; we have forked a cross-cut at this level in a north-east direction about 10 fms. towards the Stennick lode, on a guide or cross-course, which is suspended for the present. When the water is in fork to the bottom of the Stennick we shall resume the drive of this also to cut the lodes in that direction, which will be under the productive ground wrought by the former workers. We have cleared the 60, west of Law's shaft, about 60 fms. The 70 and 80 have been driven and communicated to the 100, and the 50 fms. of Long Tom shaft.—The Stennick Mine: We have forked the water and cleared up the Stennick shaft about 55 fms. below the surface, fixed suitable pitwork, footway, and skip-road in the same, and have about 20 fms. more to reach the bottom. Since the last account we have cleared and secured about 60 fms. in the adit level, and have laundered the water in the same. We have also cleared the east 50 fms., and the same level west 40 fms. We have likely to sink the 50 fms. level 45 fms. west, and are now driving the 150 fms. east, and are now widening and putting in tram-road; the completion of this will greatly facilitate the discharge of this part of the mine, and we shall also be enabled to increase the number of tributaries to take away the tin ground already seen in the back of this level. We have 17 pitches working, at tributes averaging 14s. in 1l. The reason our sales of tin have not been more is that the bottom of this level is communicated to the 100; we have forked a cross-cut at this level in a north-east direction about 10 fms. towards the Stennick lode, on a guide or cross-course, which is suspended for the present. When the water is in fork to the bottom of the Stennick we shall resume the drive of this also to cut the lodes in that direction, which will be under the productive ground wrought by the former workers. We have cleared the 60, west of Law's shaft, about 60 fms. The 70 and 80 have been driven and communicated to the 100, and the 50 fms. of Long Tom shaft.—The Stennick Mine: We have forked the water and cleared up the Stennick shaft about 55 fms. below the surface, fixed suitable pitwork, footway, and skip-road in the same, and have about 20 fms. more to reach the bottom. Since the last account we have cleared and secured about 60 fms. in the adit level, and have laundered the water in the same. 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We have cleared the 60, west of Law's shaft, about 60 fms. The 70 and 80 have been driven and communicated to the 100, and the 50 fms. of Long Tom shaft.—The Stennick Mine: We have forked the water and cleared up the Stennick shaft about 55 fms. below the surface, fixed suitable pitwork, footway, and skip-road in the same, and have about 20 fms. more to reach the bottom. Since the last account we have cleared and secured about 60 fms. in the adit level, and have laundered the water in the same. We have also cleared the east 50 fms., and the same level west 40 fms. We have likely to sink the 50 fms. level 45 fms. west, and are now driving the 150 fms. east, and are now widening and putting in tram-road; the completion of this will greatly facilitate the discharge of this part of the mine, and we shall also be enabled to increase the number of tributaries to take away the tin ground already seen in the back of this level. We have 17 pitches working, at tributes averaging 14s. in 1l. 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ceeded to say that he had great pleasure in meeting his fellow-adventurers, more especially as the balance was on the right side of the account, and at the same time it afforded him an opportunity of congratulating them on the satisfactory state of their property. It was pleasing to know that although times were somewhat hard they were in a fair way of giving the adventurers a dividend. As to the mine itself, the report fully pointed out its position and the value of the different points of operations; and the managers of their property being present, the adventurers could avail themselves of the opportunity of gaining any information in addition to that which had already been given in the report. In conclusion, he again congratulated the adventurers on the satisfactory state of their property, and trusted that the time was close at hand when he should be in a position to give them what they all wanted—dividends.

Mr. F. JOHN LAW (London) felt assured that all those concerned in the undertaking would agree with him in saying that the accounts and report were of a nature to give the uttermost satisfaction to all interested in its success. He had a very large stake in the undertaking, and had for many years attended the meetings on behalf of those shareholders who were absent, and could not help saying that he felt pleased at seeing so many of the old adventurers who had been present at meetings on former occasions. It looked well he thought, for it certainly went to prove that they had every confidence in the ultimate success of the undertaking. Beyond all doubt they had a very valuable set in North Levant, and it was gratifying to know that if tin were to rise in price, as beyond all doubt it would do, they would, he thought, at once be able to declare a dividend; but supposing tin to remain at the present low figure, he felt sure that before long they would find a good round sum to the credit of the adventurers, inasmuch as the mine continues to improve, and when the railroads which were being laid down were completed the amount of stuff that would then be brought to surface would, he thought, prove all that has been hitherto said by competent judges respecting the value of the set. (Hear, hear.)

A SHAREHOLDER asked if the gentleman who had just spoken had been underground since the last meeting?—Mr. LAW said he had not been underground since the last meeting, but he believed that one of the gentlemen then present had that morning inspected the workings.

Mr. Y. CHRISTIAN (the gentleman referred to) said that he had no desire to occupy the time of the meeting, but as a shareholder he thought it only right to say that he had that morning been underground, and he could unhesitatingly assert that North Levant, as a progressive mine, was second to none in Cornwall. He was pleased to be able to say that the whole of the workings had been carried on with zeal and economy, and in his opinion the report of Capt. Dennis and the Thomas was a comprehensive and honest one, and he had much pleasure in acknowledging the services he (Capt. Thomas) had rendered him that morning while inspecting the set. He felt great pleasure in meeting so many of his fellow-shareholders, and felt convinced that when the report was read by those not present at the meeting they would agree with him in saying that the affairs of the adventurers had been admirably managed. He was quite sure that the time was not far distant when they would all stand in a far better position, and one that would give them the credit and reward they were all entitled to. Messrs. Higgs and Son (purveyors) for the energy, shrewdness, and ability they had always shown in conducting the affairs of the company. He congratulated them on the very satisfactory state of their property, and more especially knowing, as he did, that there was no likelihood of a call being necessary (hear, hear), but every probability of the mine taking its position in the Dividend List. (Cheers.) He had travelled many miles for the purpose of being present at the meeting, and he was very much gratified with the result. (Cheers.) The motion adopting the report and passing the accounts was put and carried unanimously with acclamation.

#### GREAT WHEEL VOR UNITED MINING COMPANY.

The quarterly general meeting of shareholders was held at the offices, Gresham House, on Wednesday,

Mr. GEORGE NOAKES, F.G.S., in the chair.

Mr. W. TRUBAN (the secretary) read the notice convening the meeting, and the minutes of the last were confirmed.

The report of the committee of management was read, as follows:—

The committee beg to state that the mine maintains its productive character. Some points have, however, declined, while others have improved, but the confidence of the committee in the permanent prosperity of the mine is unabated. The lode in the 294, west of Metal shaft, which for the last three months has been worth over 100l. per fathom, is now poor; but as the winze sinking below the 194, west of Metal, and 10 fms. ahead of the 204 fms. level end, is going down on a good lode, it is hoped that the 204 fms. level end will again improve. The ground west of Ivey's shaft is very encouraging. The lode in the 102 has become productive; it is daily expected to cut the lode in the next level below. Should it open out well the mine will be much enhanced in value. The run of ground east and west of Edwards' shaft is comparatively shallow, and in whole ground, of a congenial character. The development of the mine is being prosecuted throughout with great vigour. The number of men employed underground on the 20th and 21st inst. was 232. There are no tribunes in the mine, but the average cost of sinking and driving is 10l. 4s. 4d. The average earnings of the workmen is 3l. 7s. per month. The total number of persons employed at surface and underground, including dressing floors, is 606. The skip-roads at Metal and Ivey's shafts have greatly facilitated the haulage of tinstuff from the mine, enabling larger quantities to be raised in less time, less wear and tear, less cost, and less consumption of coals. The committee observe with much satisfaction the spirit of improvement which is now shown in the working of the mine, and in the attainment of the cheapest method of extracting the ores; and where proved to be practically advantageous the committee desire to give them every support and encouragement. The trial of Doering's machine at Tincroft Mine gives hope, from its practical application, that the period is not distant when the risks attending mining enterprise will be lessened by the application of machinery in underground workings. Finally, the committee beg to state that the names of the shareholders are diminished, the supply short, and the demand increasing, it is to be expected that the price of tin will advance. The committee earnestly hope that these expectations may be realised, that the shareholders may enjoy more substantial benefits from their great and productive mine.

The report of the agents was read, as follows:—

March 17.—Ivey's shaft is sunk about 3 fathoms below the 194; we have not taken down any lode for about 2 fathoms sinking; it has taken a more perpendicular underlie than the proper angle of the shaft, and unless it changes its underlie we shall have a short cross-cut to it; at the next level a plunger-lift has been fixed, and we are now in a good position to make good progress in sinking; the last time we sampled the lode from the shaft it was worth 50l. per fathom. The 194 west is driven about 8 fathoms; lode about 18 in. wide, worth 25l. per fathom. The 194 east is driven 8 fathoms; lode 20 in. wide, poor for tin, worth 10l. per fathom. The 194 north is driven 8 fathoms; lode 20 in. wide, worth 10l. per fathom. The 174 is driven on a lode about 2 ft. wide, a very kindly lode, but poor, worth 10l. per fathom. The lode in the 162 west is 3 ft. wide, worth 10l. per fathom. We have commenced sinking a winze below the 157 to communicate with the 162 for ventilation; the lode in the winze is 2 ft. wide, but not yet taken down. We have completed tramways in the 174, east and west, and also in the 162, with proper shoots, which have greatly facilitated the dispatch of tinstuff. The average cost of the mine and shafts is 10l. 4s. 4d. The average quality tinstuff, and looking very well. The skip-road in this shaft works well, and we have also altered the stroke of the engine, which will, no doubt, be of considerable advantage to our keeping the mine well drained; the shaft is sinking by 16 men, and shall be prosecuted with all possible speed. Metal engine-shaft is sinking below the 216 by eight men, and cross-cut driving north to the lode by eight men; the ground in the cross-cut being moderately easy, we have been much assisted in the sinking of the 104 by having their work about 27 fathoms; in a portion of this driving, about 9 fathoms the lode has been very rich, and left a rich lode both in the back and bottom of the level. We are sorry to say, however, that for the last 2 fathoms the lode has been much disordered by muddle, and poor for tin, now worth 10l. per fathom; we are expecting an improvement, as the muddle is wearing out, and more water coming from the lode. The 194 fms. level end, west of cross-cut, north part, is worth 8l. per fathom. The 194 fms. level end, east part, is worth 10l. per fathom. The winze sinking on this part of the lode in the bottom, marked No. 2 on the plan, is on a very kindly lode 20 in. wide, worth 15l. per fathom; having this promising lode in the bottom of this level, and being several fathoms west of the 204 fms. level end, encourage us to hope that the 204 fms. level end will soon improve. The 194, west end, is on a very kindly lode 2 ft. wide, worth 7l. per fathom. A winze is sinking below the 204 to communicate with the 216 fathom level; the lode in the winze is 2 ft. wide, but not yet taken down. We are expecting to find a lode productive for tin, from our having a productive lode in the winze sunk on it in the 152 above. The pitwork and skip-road in this shaft are in good order, and working well. All the stopes in this part of the mine are looking very well. In this part of the mine we have also laid down tramroads in the 184 and 194, east and west, and fixed the necessary shoots; we have still a great deal of accumulated tinstuff in this part of the mine, which we feel very confident will lead shortly to profitable results. Enclosed I beg to send you tin bills for tin sold yesterday, and are sorry to say there is no rise in price from former sale, and feel very much disappointed.—THOMAS JULIAN, STEPHEN HARRIS, JOHN JAMES, HENRY JULIAN.

The CHAIRMAN said he did not know that he could add anything of importance beyond that communicated in the reports just submitted; but it had been the custom at these meetings for him to make some observations upon the general position and prospects of the mine. He beheld with pleasure upon the present occasion the faces of some shareholders who, although they had not attended the meetings for many years, had held an interest in the mine from its commencement. They had continued their interest from the days of the mine's troubles, and during the period of its prosperity, and he hoped and trusted that they would yet realise still more successful results. It was gratifying to see those shareholders present on this occasion, because it afforded him an opportunity to inform them that in Great Vor they still possessed a good and productive mine; it was his duty, at the same time, to state that while the mine was still very productive, and, judging from the character of the ground opening out, would continue so for many years, yet the ground was not of so rich a quality as the levels above; but as the economic facilities for working the ground had been and would probably be still further extended, his assurance was fortified that in Great Vor they possessed a per-

manently productive property. (Hear, hear.) In saying that he did not wish the shareholders to believe that Great Vor would be free from those ever-recurring vicissitudes and alternations inseparable from mining—one day with prospects exceedingly bright, and the next with everything under a cloud, but it had been their good fortune that the darkest cloud had never been so large as to overshadow entirely the bright prospects, for there had always been something more than the silver lining. (Hear, hear.) This day was the decennial of the present management—at the period when his colleagues and himself accepted the control of this mine it was surrounded with great trials, great difficulties, and great troubles, to which he did not now desire to advert, but merely to express his grateful thanks to the shareholders for the support they had given to himself and the committee during the ten years of their stewardship, and also to congratulate himself upon the fact that a considerable portion of that management had been under profitable and successful circumstances. (Hear, hear.) Since 1853 the tin raised had realised 330,227l., and out of that upwards of 100,000l. was expended in the old mine, from which 60,000l. worth of tin was raised. To that should be added 40,000l. taken from the Vioy and various other parts of the property, making 200,000l., and the subscribed capital being 200,000l., made a total of 400,000l. During the ten years of the present management 230,000l. worth of tin had been raised, and out of that upwards of 67,000l. had been paid in dividends, showing that about one-third of the value of the tin raised had been distributed among the shareholders. He hoped that statement would be satisfactory; but looking at the mine as it is, and considering the depth attained, it behooved them to see whether they could not only march with the spirit of the times by utilising mechanical improvement at surface, but also whether by the adoption of improved facilities underground they could not diminish the cost of raising, so that the return could be made more profitable, although the quality of the tin might be less rich. During the last six months a considerable reduction had been made in the cost of working, by increasing the facility of haulage, and effecting other improvements for the benefit of the shareholders; the committee now contemplated doing that which would benefit their miners also; they proposed to erect a man-engine, the expense of which he hoped would be met without the shareholders feeling it by a diminution of profits, or a lessened dividend. He did not apprehend that the working cost would be increased, while, if they should realise an advanced price for their produce, they would be able to pay for this important work, and yet at the next meeting declare the usual dividend. (Hear, hear.) He had made those few observations with a great deal of pleasure and satisfaction, and more particularly so when he reflected that, after 10 years' working, they still possessed a good mine, with considerable reserves, and a large amount of whole ground in the west scarcely touched, from which he looked forward to realise great results. He believed they had before them a lengthened period of success, and having expressed that opinion, he would proceed to submit the financial position of the mine as it stood this day. It was as follows:—

The audited cash account to Jan. 31 showed a balance in hand of..	£3682	15	9
Since which there has been received:—			
Tin sold in February .....	3592	3	7
Do ditto in March .....	3140	8	2
Old materials sold, and sundries .....	74	4	7
Total .....	£10,389	12	1
And paid—Cost for January .....	£2330	8	10
Sundries .....	4	14	4
Balance (cash and bills) .....	£8,054	8	11
The actual account stands this day as follows:—			
ASSETS—Balance as above .....	£8054	8	11
LIABILITIES—February cost .....	£2330	8	10
Salaries, &c. (say) .....	220	0	0
Balance in favour of the mine this day .....	£5324	9	3

The CHAIRMAN said that out of this amount the committee recommended the usual dividend of 7s. 6d. per share, after the payment of which there would be left a balance of 3108l. 19s. 3d. to be carried forward to the credit of the next account. Considering they had put in skip-roads, and that they had a depressed price for their tin, he hoped that statement would be regarded with satisfaction.

Mr. PETER WATSON asked if any information had been received with regard to the lode at Edwards' shaft, which was said to be rich, but nothing had been received beyond that contained in the report, but he might mention that he looked forward with considerable anxiety to the result of the cutting of the lode in the 114 fathom level.

Mr. PETER WATSON said he had repeatedly called attention to the importance of sinking Edwards' shaft, and he looked forward with confidence to the realisation of important results in that direction. He believed they would have a very rich lode, and he was sure that the mine should be re-collected that it was situated immediately opposite the main engine-shaft of old Wheel Vor, and was intersected by the same cross-course; and it was at least encouraging to find that a lode had been found there worth 20l. to 30l. per fathom, although it subsequently fell off; it had, however, recently again improved, being now worth 15l. per fathom. He could recollect that about ten years ago, at a similar depth at Ivey's and Metal shafts, there was a bunch of tin which, when first opened up, was worth only from 10l. to 15l. per fm., but it subsequently improved to the enormous value of 30l. to 40l. per fathom. Therefore, having a lode in the 102, at Edwards' shaft, worth from 15l. to 20l. per fathom, there was certainly every analogous ground for hoping that at the next level, as at the same depth at the two other shafts, some important improvement would be met with. He believed they would have another Wheel Metal in the vicinity of Edwards' shaft. During the last five or six years an enormous amount of money had been expended out of the profits of Metal in the development of Ivey's shaft, and he was sure that the result would be a very rich lode, and the expenditure would prove highly and permanently remunerative. As to the form of accounts—for which, by the way, he took some credit to himself for having suggested while a member of the committee of investigation—

The CHAIRMAN (interposing) said that, in addition to Mr. Watson's suggestions, those made by Mr. Cole were also adopted.

Mr. PETER WATSON (continuing) said that, with regard to the form of accounts, a suggestion had been made by Mr. Cole, that the names of the smelters to whom the tin was sold should be appended.

The CHAIRMAN did not know how far that would be advisable; they were not tied to any smelter; the object of the committee was to make as good a price as they could for the benefit of the shareholders. The committee, however, would take the suggestion into consideration, and if they found that advantage would arise by its adoption they would only be too happy to carry it out. As far as the form of accounts was concerned, it really was a synopsis of the opinion of the shareholders, and the amount of expenditure, the returns, the amount paid for materials, and the number of men employed, &c.

Mr. PETER WATSON asked what would be about the cost of the man-engine? The CHAIRMAN said the cost had been estimated at 1400l., although it was hoped it might cost less. He should almost have been glad had the question not been put, so that he might have had the opportunity at the next meeting of informing the shareholders that the man engine had been fixed, and was working well, and that the cost was not felt to be a great one.

Mr. PETER WATSON said an advance in the price of tin upon one quarter's returns would nearly pay for it.—The CHAIRMAN said they had put in double skip-roads—one to the 194 in Ivey's, and the other to the 204 in Metal; and tramways had been put in six levels, the whole expenditure of which had been met without diminishing the dividends, or the surplus balance carried forward.

The report was read and adopted, and the accounts were passed and allowed. A dividend of 7s. 6d. per share was declared, and the CHAIRMAN said the committee of management were re-elected, and Mr. George Noakes was re-elected Chairman and managing director.

The CHAIRMAN acknowledged the vote, stating that his colleagues and himself fully appreciated this continued mark of the shareholders' confidence, but it would still become him to say more than that they had endeavoured to do their utmost to promote the best interest of the shareholders, but it would be an injustice to the shareholders to say that they had done so, and he would be glad to have their services.—Mr. E. COOKE asked if the accounts just passed included the costs up to the end of February?—The CHAIRMAN said that the accounts were brought up to this day—the costs for February were included, and the tin sold on March 16 brought against it—therefore, each shareholder knew precisely the actual financial position of the company at the present time—that is, after the dividend just declared had been paid, there was a balance of 8181l. to be carried forward to the credit of the next account, and as to the price of tin, the price of English tin would advance.

The CHAIRMAN said that arrangements were always made with the smelters that the Great Wheel Vor tin would have the advantage of any rise that might take place within a week after the sale.

At this juncture of the proceedings a telegram was received from Cornwall, informing the Chairman that the standard for tin had advanced equal to a difference upon their sale of 1l. per ton.

A unanimous vote of thanks was passed to the Chairman, which terminated the proceedings.

#### MWYNDY IRON ORE COMPANY.

The sixth annual meeting of shareholders was held at the offices of Messrs. John Taylor and Sons, Queen-street-place, on March 14,

Mr. CHARLES CAPPER, M.P., in the chair.

Mr. N. M. MAXWELL (the secretary) read the notice convening the meeting.

The report of the directors stated that the receipts for the year have amounted to 25,613l. 16s. 4d. The expenditure has been 18,424l. 7s. 11d., leaving a profit of 7189l. 8s. 5d., out of which interest upon the mortgage, amounting to 1022l. 17s. 3d., has been paid, and the balance of 6067l. 11s. 2d. has been carried to the profit and loss account, increasing the amount to the credit of that account to 8864l. 6s. 6d. The directors have deemed it right to propose a dividend of 4s. per share on the present occasion out of this balance, and to make a call of 2s. per share at the same time; the result of this will be that the shareholders will receive 2s. per share in cash, and their liability on the shares will be diminished by 2s. per share also. The quantity of ore produced and sold in 1867 was satisfactory, and the profit made, having regard to the very low average price realised, was encouraging. The mortgage debt was reduced to 20,000l. on Dec. 31, since which a further sum of 600l. has been paid off, thus reducing the debt from 21,000l., at which it originally stood, to 19,400l. The directors are not called upon to pay off any further portion of this loan at present, and it will probably be allowed to continue at 5 per cent. per annum.

The report of the managing directors (Messrs. John Taylor and Sons) stated that a net profit of 6067l. 11s. 2d. was made, after payment of 1022l. 17s. 3d. the interest upon the mortgage debt. The result of this was that the shareholders will receive 2s. per share in cash, and the low price which the ore has realised. The quality of the ore is decidedly improved, probably from the increased depth reached in the mine, and from the vein having entered more into the limestone rock than formerly. The demand for the ore is better than we could have anticipated, judging from the state of trade generally. The price of labour has lately been reduced, and the effect of this will be felt during the current year. The iron shafts and levels in the mine have been carried on to full complements of men, and at several points new portions of productive vein have been developed. The machinery, the railways, and the works generally are in excellent order. They have carefully gone through the plans and sections of the mine upon the ground with Capt. Vivian, and looked through all the items of expenditure with him and the secretary of the company, and are

satisfied that at a fair average price of ore the mine would now yield a satisfactory profit.

The report of the company's resident agent (Captain W. Vivian) stated that to maintain the productive character of the mine the exploratory bargains have been fully kept on during the whole year. Capper's engine-shaft has been deepened 13 fathoms, and a new cross-cut is now being driven towards the vein. It has passed through shale ground 21 fms., and has lately entered the limestone. This new level has already drained the water from the upper levels of this part of the mine, showing that the ground is open and full of cavities generally. The distance yet to drive to the vein depends entirely upon the angle the vein may be found to take in the increased depth; but should it continue at about the same angle it has in the level above it may be met with in 18 to 20 fms. further driving. Taylor's shaft has also been deepened 17 fms., and a level opened southward towards the vein. Just now the best prospects for ore are at the 60 fms. level, west of Taylor's shaft; and then, with two cross-cuts south therefrom, and a winze below the level, are all in good ore. It was last year considered desirable to make further trials on the bar of ground in the centre of the mine, hitherto supposed to be poor. A level, the 45, west of Fry's shaft, was then driven some fathoms into this ground, and some good ore was found; but it again became poor, and was then suspended. He has since driven two cross-cuts south from the old shallow level, and sunk a winze below it. One of these cross-cuts appears to have now reached a body of good ore. The 45 and 60 fms. levels, east of Taylor's shaft, have both reached hard bars of poor ground, so that they are not raising much ore in that direction, but are driving the 60 fms. level east in the shale to expedite the opening of the eastern ground, and from this level he purposes to open cross-cuts south through the limestone to the line of the vein at convenient distances. By this plan they can open ground faster and cheaper than by driving the ends through the hard bars of limestone which have come across them. He fairly expects to find fresh bunches of ore in the eastern section of the mine.

The CHAIRMAN said the lucid report of the directing managers referred so fully to the position and prospects of the company's property that but little had been left for him to say. He thought, however, looking at the depressed state of the country during the last twelve months, which had exceptionally affected the iron trade, that the reports now submitted must be considered satisfactory. With regard to the mortgage debt, which originally amounted to 51,000l., that was reduced, on Dec. 31, to a sum of 20,000l., and all would agree, was a step in the right direction. There had been a slight increase in the item of addition to plant, amounting to 218l., but as representatives of that expenditure they had full value by the purchase of wagons, &c. For the purposes of dividend a sufficient amount of money had been earned to pay 4s. per share; but it had been a matter of consideration with the board as to the best way to deal with that sum, and, after consulting the managers, and taking all matters into consideration, the directors had arrived at the unanimous conclusion that the most desirable course to adopt would be to pay a dividend of 2s. per share, and carry the other 2s. towards the reduction of the liability upon the shares. He hoped that recommendation would be endorsed by the meeting, for there could be no doubt that the amount of uncalculated capital had the effect of keeping down the market value of the shares. He should be sorry to excite any undue expectations, but, looking at the general tenor of the directing managers' report, he certainly did not think there was the slightest occasion to entertain any gloomy forebodings; on the contrary, the prospects of the mines were now favourable. Having stated that he should be glad to afford any further information, he concluded by moving that the reports and balance-sheet be received and adopted.—Mr. REYNOLDS (a director) seconded the proposition.

Mr. H. L. PHILLIPS asked for some explanation of the item for brokerage?—Mr. MAXWELL said that the amount referred to was paid to Messrs. Henry Sparrow, of Dudley, as commission for the sale of iron ore to the Ynyscedwyn Iron Company. It was an outside transaction, and a good price having been realised, the company allowed a commission of 6d. per ton.

Mr. MORGAN could hardly understand the object of the directors in placing 2s. per share of the realised profits towards the reduction of capital.—Mr. TAYLOR said the fact was they required some floating capital. The Chairman had informed them that a profit had been realised equal to a dividend of 4s. per share, but if that amount were paid it would be necessary in three or four weeks to send out call letters to the shareholders. To avoid that course, the directors now proposed to capitalise half the amount of realised profits, and thereby reducing the liability per share to that extent. Mr. Taylor added that they were gradually reducing their stocks; but, as floating capital was required, the directors thought the plan proposed would be the most agreeable way to act with the profits.

Mr. DENNIS thought the shareholders had good reason to congratulate themselves upon the position of their property, and seeing that in the present condition of the iron trade, and with the depressed price of iron, the directors had been enabled to realise profits, it certainly seemed to him the prospects of the enterprise were of the most encouraging character.

A SHAREHOLDER drew attention to the fact that during the last six years the average annual dividend had been 2½ per cent., while the share was at 37½. He said, paid, were of a market value of not more than 15s.—Mr. REYNOLDS said if the hon. proprietor had any to sell at that price, he (Mr. Reynolds) would take them off his hands. (Laughter.)—A SHAREHOLDER did not wish to dispose of his shares, and had made the remark with the view of eliciting the information as to whether there was any prospect of the property improving, and thereby the market value of the shares be improved.—The CHAIRMAN said the directors hoped such would be the case, and there was reason to believe it would be so.

The motion adopting the report and accounts was put and carried unanimously.

On the motion of the CHAIRMAN, seconded by Mr. HEBERDEN, a dividend of 4s. per share was declared, to be paid in the manner recommended by the report.

The CHAIRMAN said the next business was the re-election of Mr. Gordon as director, and moved a resolution to that effect, which was duly seconded.—Mr. MORGAN moved an amendment, not in order to oppose the directors, but upon the ground that Mr. Gordon was a very small shareholder. Mr. T. Vaughan Morgan was a very large shareholder, holding 1000 shares, and being thoroughly acquainted with Monmouthshire, and retired from business, was eminently qualified for a seat at the board.—Mr. TAYLOR said that Mr. Gordon was originally an auditor of the company, and was then elected a director, but at the moment was seriously indisposed. It was the intention of the board, however, to recommend that the number of directors should be diminished, in support of which recommendation he held in his hand a proxy from a shareholder who held half the shares of the company. Although he (Mr. Taylor) had the greatest respect for Mr. Morgan, he did not think it would be competent for the meeting to elect him upon the present occasion, and the more especially as he had been entrusted with a proxy representing so large an interest in favour of a diminution of the number.—The CHAIRMAN thought it was a matter which might safely be left in the hands of the board, for no objectionable course would be followed; and that he would communicate with Mr. Gordon, and undertake to obtain his resignation.—Mr. Gordon thereupon re-elected a director, as was also Mr. Lancaster. Mr. Fletcher was reappointed auditor.

Mr. TAYLOR, in reply to a question, stated that there was one main vein, the upper part of which might be described as being the end of the coal measures. A few miles off there was another mine which had been working for several years, during which time it had produced considerable quantities of iron ore, but it was not so rich in quality as that at Mywydy. He could not better describe the peculiar condition of the ground than by comparing it with a honeycomb, the cells of which were filled with iron ore. He did not think they could look upon it as being practically inexhaustible; but, in addition to that already opened, there was a considerable quantity of ground which yet remained to be proved. He thought there was quite a new territory to be opened out, but that at present was quite a question of hope. The great desideratum, however, and for which he was anxiously looking forward, was a better price for iron, as an advance of 6d. to 1s. per ton would make a very great difference in their gross profit. He believed it was now being found that iron could be made from the Mywydy ore much cheaper than from any other description.

A vote of thanks to the Chairman and directors terminated the proceedings.

#### MINING IN EASTERN NEVADA, U.S.

[From our Correspondent.]

Pahrnatag District is situated in Lincoln county, about 100 miles south-east of Belmont, and was discovered in 1865 by a party of miners returning from the Colorado river. On entering the district one is impressed by the peculiar shape and appearance of a high mountain, which rises far above the other summits of the range in which it is situated. A belt of white rocks of quartz encircles the mountain below the upper surface, which surface is adorned with three distinct summits. The sides of the mountain, widening in their descent, form a multitude of other attached elevations and deep canyons, all uniting finally in the common broad base. This remarkable elevation of about 9000 feet is named Mount Irish, and forms the centre of the district. Ascending the eastern slope of the mountain, and after passing over large quantities of debris, the attention is first attracted by slates of greyish-blue colour. Overlying these are large stratified deposits of limestone, abounding in fossil remains. In this limestone many discoveries were made, these extensive croppings showing the richest ore. Very little work was done on the mines of this district last year, the operations being confined principally to the Pioneer Company, which is working a claim on the Illinois ledge. The Pahrnatag Silver Mining Company is working the Indiana ledge, which produces large quantities of good ore. This company has erected a ten-stamp mill at Hiko, which is arranged for wet crushing and roasting. The Alameda Mining Company owns a claim on the List ledge, which is very extensive. A quantity of ore from this ledge has been shipped to Austin for reduction, showing a remarkable high average. Lot No. 1 yielded at the rate of \$449 of silver per ton; No. 2, \$213; No. 3, \$207; No. 4, \$160; and No. 5, \$125 per ton. The samples were produced from the surface down to the depth of 75 ft., the lowest point in the mine. The vein is of much greater width than first supposed, being at various points from 20 to 30 ft. wide, and has been traced for a great distance, and is apparently the "mother vein" of the district. If the representations made concerning its features are at all correct, and there is no reason to doubt them, the great List vein is capable of employing hundreds of stamps when properly developed. Albert Barber and Co. own a ledge called the Webster, on which they have sunk a shaft 100 ft. deep, and have taken out good ore. The Pro Rata Silver Mining Company owns a number of ledges, which are being prospected through the mountain in Springer's Mountain. The surface of the mountain holding the deposits of silver ore covers an area of 30 square miles, and is beautifully supplied with timber, but water is not very abundant. Pahrnatag valley is well watered, and has a soil of remarkable fertility. Some 400 acres of hay and grain land may be cultivated, some parts of which will require irrigation, and others draining. The land cultivated last year produced 350 tons of hay, 500 bushels of oats, 200 bushels of barley, 600 bushels of corn, and 1200 bushels of potatoes, besides melons and a variety of vegetables. In the range of mountains east of Hiko a new district has been formed, called the Hiko gold and silver mining district.

In Palmetto district, Mr. Catherwood has about 30 men employed in mining operations; he has opened several claims, one of which, called the Silver Champion, has an incline shaft 210 ft. deep. There is valuable property in this district, of which the large well-defined Kentucky ledge is conceded to be the principal. The ledge is from 6 to 9 ft. thick, and carries a compact mass of ore, of very simple combination. Tests and estimates place the average yield of the ore



**NOTICE.**—CAPT. S. M. RIDGE, of LLANIDLOES, MONTGOMERSHIRE (late manager of the Brynastig and Cwm Fron Mines, and others, in Shropshire and Wales), is NOW OPEN to INSPECT and faithfully REPORT UPON an LEAD MINE in either of these localities that may be conduced to his care, having had better than 30 years' experience in lead mining, as miner and agent.—Address, Capt. S. M. RIDGE, Llanidloes, Montgomeryshire.



## Mining Correspondence.

## BRITISH MINES.

**BEDOL-AUR.**—H. R. Harvey, March 18: Jones's pitch, in back of the 70, south of shaft, is looking much better, yielding fully 15 cwt. of lead ore per fathom. Leigh's pitch, in the 70 north, is yielding about 7 cwt. of ore per fathom. Oare's pitch, in the bottom of the 70, south of shaft, is yielding some nice lumps of lead. Other parts of the mine are without alteration.

**BLACK CRAIG.**—J. Smitham, March 19: Harriet's cross-cut, at the 63, is driven north from the south side of the plat 2 fms. 2 feet. The ground in the cross-cut is still very hard for driving in, but I am in hopes it will improve as we get forth. There is no improvement yet in the cross-cut driving south of the 54 south; there is no appearance of the regular south wall of the lode yet. The stope in the back of the 54, west of Harriet's cross-cut, are producing about 3 tons of lead per fathom for the breadth of the stope (between 2 and 3 fathoms). The stope in the back of the 54, east of No. 2 cross-cut, are producing at present about 10 cwt. of lead per fathom. The winze sinking in the bottom of the 43, on the east end of the stope below, is producing some good saving work for lead; but the best part of our lode below for lead is to the north of this winze. I think we have from 6 to 9 ft. more to sink to hole to the stope below. We have not weighed any lead into the house this week, but I think we have about 6 or 7 tons on the floors in course of dressing, that we shall get into the house in two or three days. We put 11 tons 18 cwt. of blende into the railway-trucks yesterday, which I expect left Palmerston last night by the last luggage train for Carleton. The blende is 21 cwt. to the ton, dry weight.

**BOTTLE HILL.**—J. Eddy, March 19: I have not found any alteration in the main lode. I may just say that the lode is still large and tinny in both the 12 and 24. We have now four men in each level working on tribute at 15s. in 12, the tributers paying all cost. On the south lode our working has been more satisfactory. The lode in the 12 west has not improved in appearance, but but in quality. The lode in the present end is still 3 ft. wide, and worth for tin from 10 to 12 cwt. per fm.; now driving at 4 ft. per fm. We have still four men driving and stopping on tribute east of shaft, in the same level, at 15s. in 12, tribute; here the lode appears to be making larger, and is now producing more tin than usual. I would strongly recommend a further trial of this lode both east and west of this shaft in the 12—say, drive for two or three months by four men in each level. The nature and quality of the lode now showing in the ends leads me to believe that the doing the work recommended would not be a loss to the company, as the lode in the ends will more than pay the cost for driving, and at the same time in driving we should be laying open backs that might be stopped and taken away at a good profit—that is, if the lode continues good in length and depth, as we now have it in the present ends of ground. The work recommended ought to be carried out, as there are good chances of success; and, before this is done, in my opinion, this lode will not have had a fair trial. I hope to go to Truro on Saturday next to see the weight of out parcel of tin, which I believe will be about 100 lbs. In addition to this, we have about 3½ tons broken underground and now in course of dressing.

**BRONFLOYD UNITED.**—T. Kemp, March 18: The shaftmen at the new shaft are getting on well in fixing rods, pumps, &c.; this work will be completed by the end of this week, and I hope to cut the lode by the shaft in about three weeks' time. The lode to the west of the cross-cut, in the 63, is worth 35 cwt. of lead ore per cubic fathom. In the 62 fm. level, east of Barton's cross-cut, the lode is composed of blende, intermixed with carbonate of lime. The stope under the 52 worth 35 cwt. of ore per cubic fathom. The stope to the east and west of winze, above the back of this same level, are producing on an average 20 cwt. of ore per cubic fathom. We shall sample on Saturday next 70 tons of lead ore.

**BRYN GWIOL.**—S. Harper, March 19: The lode in the winze sinking below the 102, east of engine-shaft, is about 2 ft. wide, composed of floor-spar, blende, intermixed with shale, and lead ore, saving work. The lode in the 55, west of No. 3 winze, is still small and poor, but from the appearance of the lode in Bramwell's shaft, which is good, and the dip of the run of ore, we may reasonably expect to meet with a good lode in this level soon. William's pitch, in the back of this level, east of No. 3 winze, is worth 2 tons per fathom; and the pitches both in the back and bottom of this level are without any remarkable alteration since my last report. Bramwell's shaft, sinking below the 75, is improved since my last; the lode now about 2 ft. wide, worth about 2 tons per fathom, a very promising lode, and the lode in the 75, west of Bramwell's shaft, is sinking, and a shade better, and from the appearance of the ground I think the lode will further improve soon; the pitch in the back of this level is still worth 2 tons per fathom. We have set two pitches in the back of the 66 in the old workings, and am glad to say that we have a good lode in one, and a very promising lode in the other; it will require some little time before we can properly work this part of the mine, been so much filled up with old stuff, but so fast as we can clear out the old stuff, so that the men can get at their work, we shall be able to set the old ground on fire. The lode in the 66, east of the engine-shaft, is also looking a shade better, still producing nice lumps of lead ore. Having communicated a cross-cut from an intermediate level at the 66, west from the engine-shaft, on Brooke's old run, and which has been suspended for some time for want of proper ventilation, we shall now as soon as possible commence the driving on the old run of lead, and hope to be successful in meeting with the same run of lead as formerly.

**BWALDRAN NISLS.**—R. Northey, March 17: The lode in the 10 is 5 feet wide, and worth 1½ ton of ore per fathom. There is no change to report in the 25 fm. level, the men having lately been employed cutting for the new line of rods and other work. The 35 is still in the disturbed measure of ground. The lode in the 45 is still large; at this point not much has been done, as the men are put to rise in the back for ventilation. All the stope throughout the mine are producing their usual quantity of ore. We are going on as fast as possible with our crushing and dressing, and if this season is good, we hope to send to market in about four weeks' time 15 to 20 tons of ore. We have purchased about 200 fms. of strong iron rods, with pulleys, &c.; we are now removing the same, to be fixed for use as soon as possible.

**BWLCH CONSOLS.**—R. Northey, March 16: The lode in the 30 is 2½ ft. wide, and worth 1 ton of ore per fathom. The three stope in the back of this level are worth on an average 1½ ton per fathom. The lode in the 40 is 2 ft. wide, and worth 16 cwt. per fathom. The stope in the back of the 40 will yield quite as much ore as the reported. The lode in the 50 is 4 ft. wide, and worth 10 cwt. per fathom. The lode in the 60 is 3 ft. wide, and worth 5 cwt. per fathom; this end is improving as it approaches the ore ground opened up eastward by the levels above. The 70, east from the bottom of Ritchie's shaft, is looking very promising, and opening out tribute ground. The mine never looked better than at present. We sampled to 50 tons of the usual quality ore.

**CAPE CORNWALL.**—R. Pryor, R. Hosking, March 17: The lode in the 100, east of engine-shaft, is producing good work, and we have to drive the lode 2 fms. further to come under the winze sinking below the 90, after which we would strongly recommend the driving of a cross-cut north to cut the other lodes; this is a great and important point. The lode in the winze sinking below the 90, is producing saving work for tin. The lode in the 70, west of shaft, is full 4 ft. wide, producing low quality tin stuff, with stones of copper ore, a kindly lode.

**CARADON CONSOLS.**—S. Bennetts, March 17: There is but little change to notice in the lode in the winze sinking below the 100, and in the 100 fathom level. In the 68 west the lode has made a sort of splice, and is not so ore as we have had it. The stope in the back of the 58 east is somewhat improved, and, from its general appearance, I think a further improvement will be met with.

**CARNARVONSHIRE CONSOLIDATED.**—John Kitto, March 19: The lode in the ends driving both east and west in the 20, at Coal Mawr Pool, is yielding some good ore in detached lumps, which undoubtedly indicates their near approach to a thick and well improved lode. The end driving south, on the new lode, in the same level, has already improved, and is now producing good saving work for lead. The tributers on the lode parallel to the main lode are raising a fair quantity of ore, and making wages. At Penarag we have not taken down any lode in the shaft for the last two fathoms sunk, but this I have ordered to be taken down at once, and from which we may reasonably expect a good quantity of ore, as, when we left off carrying the lode in the sinking it was with a heavy load, and with very prospect of further improvement. The deep level is now in (under cover) and is now improved, and is being driven at the rate of from 10 to 12 yards per month. There is now about 50 yards of cover over the forebore, and a lode intersected at this depth, and which we anticipate doing shortly, which must be regarded as being of the utmost importance to the undertaking, and will add very materially to its present prospects and value. We have now about 12 tons of ore on the mine, which quantity will be pretty rapidly increased by the produce of Penarag shaft and from the other parts of the old mine.

**CERN BRWYN.**—James Paull, March 17: Saturday last being our setting-day, the following bargains were set:—The 92 to drive east of Taylor's shaft, by six men, at 6s. 7s. 6d. per fathom; the lode here is 3 feet wide, worth 1 ton of lead ore per fathom. The same level, west of shaft, is set to four men, at 6s. per fathom; the lode is of a promising character, and producing good stones of lead ore, with every indication for an improvement. The 80 to drive east of Taylor's shaft, by four men, at 6s. 7s. 6d. per fathom; the lode here is 3 feet wide, producing malleable and silver-lead; the western part is above 18 inches wide, producing malleable and lead; this is a very promising part. We have cut water in the Colquite shaft, which will retard our speed in sinking. In the 20, going towards Colquite, the men are cutting through the lode at present, of which I will write you in a day or two.

**CHANTICLEER.**—W. Wasley, March 19: The ground in the 110 yard level, driving west of shaft, has got easier for driving since my last report; the lode is also looking a little more promising, and is producing some fine lumps of ore.

**COLQUITE AND CALLINGTON.**—Thomas Doldge, March 18: The lode in the Colquite shaft is split in two parts—the eastern part is about 3 feet wide, producing malleable and silver-lead; the western part is above 18 inches wide, producing malleable and lead; this is a very promising part. We have cut water in the Colquite shaft, which will retard our speed in sinking. In the 20, going towards Colquite, the men are cutting through the lode at present, of which I will write you in a day or two.

**CWM RFIN.**—March 17: During the past week we have broken some very good work on a branch taking off north in the stope between the deep adit and the 10; we expect this will hold back as far as the cross-course, which is 6½ fms. if so it will give us a good many tons of ore. The lode in the deep adit level has varied since the last report, at times of a loose and hollow or raggy nature, and much water issuing from it. The lode in the present end is 2 ft. wide, composed of clay-slate, veins of quartz, and spots of mundle. The lode in the stope over the back of this level, 65 fms. east of boundary, has improved, and will now yield 2 tons of lead ore per fathom. The lode in the stope in back of ditto, 35 fms. east of boundary, will produce 1½ ton per fathom. We have four other stope working in the back of ditto, yielding on an average ¾ ton per fathom. The lode at Gwyn's drift, east of boundary, is 20 in. wide, composed of clay-slate, veins of quartz, and spots of mundle; this level appears to be passing through a similar channel of ground as that of the level below. The lode in the same level, west of Roberts's winze, is 4 ft. wide, containing kilias, decomposed quartz, and lead ore, and will turn out 15 cwt. of the latter per fm. The lode in the stope over the back of this level, 18 fms. east of Roberts's winze, is 3 yards wide, worth 2 tons of lead ore per fm. We have four other stope working in back of the same level, yielding on an average 15 cwt. of lead ore per fm. There is no improvement in the rise over the Williams's level, east of the boundary, and it is for the present abandoned. All the other parts of the mine are without any alteration to remark. We shall sample on Tuesday next the usual quantity of ore.

**EAST CARN BREA.**—Isaac Richards, March 16: The lode in Thomas's engine-shaft is 1½ foot wide, composed of quartz, capel, fluor, mundle, and good stones of copper ore.—Thomas's Engine-Shaft, No. 3 Lode: In the 80 east the lode is 15 in. wide, consisting of quartz, mundle, and a little copper ore. The lode in the 80 west is 5 ft. wide, consisting of capel, quartz, fluor, mundle, and copper ore, worth 1½ ton per fathom. In David's cross-cut south, at the 80 west, a lode has been met with, and cut through; it is 1½ ft. wide, composed principally of capel, with a little mundle and copper ore; this cross-cut is being continued for the intersection of the other lodes still to the south of this point. The lode in the 50 east, and east of William's cross-cut, is 1 foot wide, and worth ½ ton of copper ore per fathom. A rise (Tonkin's) is being put up in the back of the 50, east of William's cross-cut, the lode in which is 1 ft. wide, consisting of capel, quartz, and copper ore, worth ½ ton per fathom. The lode in the 50 west is 1½ ft. wide, consisting of quartz, capel, fluor, and copper ore—saving work. The lode in the 40 west is 1 ft. wide, and worth ½ ton of copper ore per fathom.—Buckley's Shaft, No. 6 Lode: The lode in the 50 west is 1 foot wide, and consists of capel, quartz, and a small portion of copper ore. The lode in the 40 fm. level west is small and poor.

**EAST GUNNISLAKE.**—James Bray, March 19: The lode in the winze sinking under the 46 is 5 ft. wide, producing good stones of ore. The stope in the bottom of the 46 continues to produce 2 tons of ore per fathom. There is no change in the 36 fathom level cross-cut south. The lode in the shallow adit is still very large, carrying strings of ore throughout. This point looks very kindly for early improvement.—Impham Lode: The lode in the present end is not looking so well, now worth 1 ton of ore per fathom.

**EAST GUNNISLAKE AND SOUTH BEDFORD.**—J. Bray, March 13: We have completed the incline, and are now in a position to haul any quantity of stuff, the produce of any workings under the 36. Since I sent you the report for the meeting the lode in the 54 has not looked quite so well for ore; and seeing that the end costs us in hauling charges, training, &c., something like 8s. per month, I have (after conferring with Mr. Dennis on the matter) stopped this point, and now propose working the piece of ground, between the 54 fathom level end and the 46, from the 46 itself; by so doing, we shall be able to haul the stuff over the incline by means of the water-wheel instead of by manual labour, as heretofore at Gard's shaft. They are through the cross-course at Impham, and I am glad to say that the row of the lode seen is worth 3 tons of good ore per fathom. No other change to advise you of.

**EAST SNAEFELL.**—W. H. Rowe, March 17: The engine-shaft is sunk 5 fms. 4 ft. below the 15 fm. level. The ore part of the lode is now gradually leaving the shaft, and underlying slowly westward. As we shall not sink over 2 fms. more perpendicularly, I have arranged with the men not to lose hold of the part of the lode referred to, as it would have to be taken down at some time; but, considering the increased width, &c., I have allowed them 29l. per fathom for this month. The quartz is getting a little firmer, and well mixed with lead, worth, I think, 1 ton per fathom of the shaft; but the washing-floors will soon assist any calculation of this sort. As soon as possible I propose to drive out a 20 fm. level a limited distance northwards, as there is some very good ore going in that direction, and where, as I have stated before, a richer body of ore ground than we have yet seen very probably exists. The sum in the 15 south is set at 8l. per fathom, but the lode is not of much value as yet. The ore further south, I expect, dip underneath the present close bed of rider. One part of the stope continues to yield some very good ore—certainly too good to leave as yet.

**EAST WHEEL GRENVILLE.**—R. Odgers, W. Bennetts, March 18: Since our advice of Wednesday the men have been principally engaged at capstan sending down the plunger-lift, and hence we have no change in the lode.

**G. R. Odgers, Wm. Bennetts, March 18:** The shaftmen are busy fixing the plunger-lift, and which we hope to complete in a day or two. The lode in the 110 east is improving in size, and the ground is getting easier, which we think is a pleasing feature, as we shall shortly be getting under the junction of the capel and the good lode, where the ore lodes, where we are now sinking, are level. The lode in the 110 west is 2½ ft. wide, and worth for copper and tin 8l. per fathom. The lode in each of the stope above this level is worth 10l. per fathom for copper and tin. We are pleased to tell you that the 95 east, on the caunter, has improved; it is now worth fully 8l. per fathom. We find stronger tin in this end than we have ever before found to the east of the shaft, hence we like the appearance of this lode very much.

**GRANVILLE.**—Wm. Richards, March 18: We have effected a communication with the 47 fm. level. No other change to notice.

**EBURY.**—F. Evans, March 19: In the 54 fm. level, driving east of Evans's shaft, the lode is over 3 ft. wide, principally made up of carbonate of lime and spar, with lead scattered throughout. We shall begin to drive west after tomorrow, in a decent level for lead.

**GAWTON COPPER.**—G. Rowe, G. Rowe, June, March 14: During the past week our shaftmen have been engaged in taking out a piece of ground and re-laying the tramway at the 60 fm. level, which will be completed in a few days. The lode in the 70 west is worth 1 ton of ore per fathom. The lode in the 60 fm. level east is worth 2 tons of ore per fathom. The lode in the stope in bottom of the 90 fm. level, west of winze, is worth 4 tons of ore per fathom. The lode in the stope east of winze is worth 2 tons of ore per fathom. Sprague's stope, in the back of the 60 west, is worth 3½ tons of ore per fathom. Adam's stope, in the back of the 50 west, is worth 2 tons of ore per fathom. Spare's stope, in the back of the 50 east, is worth 3 tons of ore per fathom. The 124 west is the easier of the two, and at 10s. 6d. per fathom, former price 10l. per fathom. There is nothing new to report on the stope and pitches. We sold yesterday tin stone to the amount of 244l. 5s. 9d.

**GONAMENA.**—M. Pascoe, March 17: The ground in the 138 fm. level cross-cut south is a little harder, and letting out more water; it appears to be getting better, and the sinking of each is being forced on as fast as possible. The lode in King's shaft, sinking below the 74, is worth 15l. per fathom for the length of the same (90 feet). Butler's shaft, about 200 fathoms west of King's, is quite dry, and the sinking below the 64 resumed by six men; the lode looks promising to improve, and worth 10l. per fathom. The 74, west of Sleggan's, is worth 12l. per fathom, driving at 4l. per fathom. The winze below the 50 is worth 10l. per fathom. The 64, east of Butler's, is worth 12l. per fathom. The 64 west, in the easier of the two, is worth 10l. per fathom, former price 10l. per fathom. There is nothing new to report on the stope and pitches. We sold yesterday tin stone to the amount of 244l. 5s. 9d.

**GREAT NORTH DOWNS.**—Wm. Rich, Cornelius Bawden, March 18: There is very little alteration in the lode in the engine-shaft, in the 60 fm. level, the sinking of each is being forced on as fast as possible. The lode in King's shaft, sinking below the 74, is worth 15l. per fathom for the length of the same (90 feet). Butler's shaft, about 200 fathoms west of King's, is quite dry, and the sinking below the 64 resumed by six men; the lode looks promising to improve, and worth 10l. per fathom. The 74, west of Sleggan's, is worth 12l. per fathom, driving at 4l. per fathom. The winze below the 50 is worth 10l. per fathom. The 64, east of Butler's, is worth 12l. per fathom. The 64 west, in the easier of the two, is worth 10l. per fathom, former price 10l. per fathom. There is nothing new to report on the stope and pitches. We sold yesterday tin stone to the amount of 244l. 5s. 9d.

**GREAT RETALLACK.**—G. R. Odgers, J. Harris, March 14: No. 1 Lode: We have to-day forced this shaft. The lode in the 20 south is 15 in. wide, composed of quartz and good silver-lead, worth 3 cwt. to the fathom. The lode in the 20 north is looking better than it was on Saturday; it is worth fully 4 cwt. of silver-lead per fathom. The 114 west, on the quantity of lead in the 95 fm. level, the lode is 15 in. wide, producing saving work for lead. We like the appearance of this lode better to-day than we did last Saturday, and we believe, when properly developed, that it will be found to be a very productive lode.—No. 2 Lode: We have cut a winze-plate, &c., at the 20 fm. level north, and the men have just commenced to sink the winze, but they have not yet done sufficient to alter the value placed on it in driving. This is the only change we have to report on the lode and its workings, and the report of Saturday.

**GREAT RETALLACK.**—G. R. Odgers, J. Harris, March 18: No. 1 Lode: The lode in this shaft may be called all the width of 4 ft.—4 ft. wide, composed of branches of spar and white iron, containing good stones of lead; from the character of the ground, &c., we believe we shall find good lead as this lode is more developed in depth. The lode in the 20 south is from 15 to 18 in. wide, of a friable quartz and white iron, with good silver-lead, particularly towards the bottom of the level, worth 4 cwt. to the fathom. The lode in this level near Vennan's lode, the 114 west, on the quantity of lead in the 95 fm. level, the lode is 15 in. wide, producing saving work for lead. We like the appearance of this lode better to-day than we did last Saturday, and we believe, when properly developed, that it will be found to be a very productive lode.—No. 2 Lode: We have cut a winze-plate, &c., at the 20 fm. level north, and the men have just commenced to sink the winze, but they have not yet done sufficient to alter the value placed on it in driving. This is the only change we have to report on the lode and its workings, and the report of Saturday.

**GREAT SOUTH CHIVERTON.**—J. Nancarrow, J. George, March 13: There is no alteration in the ends in the 50 nor the 20. We are in the 40 making fair progress in driving, and have cut a branch that is letting out some water. The 30 west does not yield quite so much lead as last week, but it never looked more likely to turn out well than it does now, and from its appearance cannot fall to be valuable below.

**GREAT SOUTH TOLGUS.**—J. Daw, March 18: Friday last was our setting-day. In the 154, east of new shaft, the lode is 1 ft. wide, unproductive—set to four men, at 3l. 5s. per fm. In the 150, east of Noel's shaft, the lode will produce 2 tons of ore per fm.—set to six men, at 5s. per fm. In the 150, west of Noel's shaft, the lode is 1 ft. wide, producing 1 ton of ore per fm.—set to six men, at 7l. per fm. In the 125, east of Noel's shaft, the lode has improved during the week; it will now produce 2 tons of ore per fm.—set to four men, at 6l. per fm. In the winze sinking below the 140, on the tin lode, and west of Lyle's shaft, the lode is 3 ft. wide, worth 9l. per fm.—set to four men, at 9l. per fm.

**GREAT WHEAL BADDERN.**—Richard Pryor, H. Trengon, March 14: Hill Brothers Engine-shaft: In the 75 fm. level cross-cut south we have within the last day or two intersected several cross-courses, containing malleable, letting forth a quantity of water; the end is still in the alvan course, and the ground for driving is without any alteration since our last report. In the 75, on the Baddern lode, driving west from the cross-cut, the present end consists of a decomposed elvan, with veins, or branches, of spar and mundle intermixed throughout, and the lode 2 ft. wide, composed of soft spar, mundle, flookan, and spots of silver-lead. The water coming from the end and lode appears to be increasing, which indicates we are getting nearer the cross-course.

**Gwyn Liffon deep adit** since last report, therefore if it continues the same during this week I think it would be advisable to make preparations for sinking the old shaft the beginning of next week, as there is water, clearing stuff, &c. We also want several fathoms of launders to carry the water over the old workings. The lode we intersected in Gwydyr on March 13 is about 1 foot wide, composed of spar, mundle, blende, and yielding good saving work for lead ore, especially the eastern end, the western end being disordered by the north and south branch we are driving.

**HARWOOD.**—J. Race, March 17: I have taken two men from the new vein and put them to the four who are enlarging the level to Trough, as we can commence to get ore here at once as soon as the level is open through. They have got some good samples of lead ore in enlarging the old level. The level where driven has been a very small one and driven in a large vein, and sometimes

neither cheek or wall of the vein seen for 20 fathoms. I think it will be advisable to put out the cross-cuts, as it is probable that good bunches of ore may be found. The ground is easy. No alteration in Scar Head level or in the north string, both producing ore as last reported. I sent down sample for sale of 30 tons of ore last Saturday.

**MAUDLIN.**—J. Tregay, March 14: Old Mine: The men have been principally employed during the past week in preparing the deep adit level for driving on the new lode east, as for a short distance this level requires cutting down. The new lode looks well, producing good stones of copper ore.—West Mine: The lode here is principally gossan, with spots of copper ore.

**MINERA UNION.**—W. T. Harris, March 19: Low's Shaft: The erection of the whim has been completed, and now in good working condition. The driving on the lode at the 40 yard level makes good progress; the ground is very promising for lead. We propose to resume the sinking towards the 60 yard level in a few days.—Braber's Shaft: The ground in the 60 north is the same as last reported. The pitch in the back of this level yields stones of lead. The pitch in the back of the 80 south is worth 12 cwt. of lead per fathom.—Boundary: The pitch in the bottom of the 60 produces 5 cwt. of lead per fathom; the pitch in the back of this level is worth 10 cwt. of lead per fathom.—Williams's Shaft: The lode in the 40 north is worth 12 cwt. of lead per fathom. The stope in the roof are worth 8 cwt. of lead per fathom. The pitch in the bottom of this level is worth 12 cwt. of lead per fathom.

**MOUNT PLEASANT.**—Wm. Wasley, March 19: Last Saturday I set the 120 yard level cross-cut to eight men, to drive north of Jenkins's shaft for this month, at 22s. 6d. per yard, the men to pay all costs for drawing, &c., as before. The end of the cross-cut is now 50 yards from the shaft, and good progress still being made with driving, and the ground looking favourable for the production of ore. I have one man and one boy raising ore near Bright's shaft, at 8l. per ton for ore cleaned, ready for market.

**NEW DEVON CONSOLS.**—H. Richards, March 18: Trewollach Mine: The lode in the adit level is composed of quartz, gossan, and soft spar, and spotted with lead—a very kindly lode, varying in width from 1 to 4 feet. The stratum being a light blue kilias is very favourable for lead ore; in my opinion the lode will not fail in yielding great quantities of lead when properly developed. I think you have a very valuable property. There is an elvan course traversing the set, and no doubt when the lode near large deposits of lead will be found. There is also another lode in the eastern part of this set, which is looking very promising. We are pushing on the engine-shaft as fast as possible; the ground is a little harder, and now stands without timber. There is a branch in the engine-shaft, from 3 to 8 in. wide, underlying west, and dropping into the lode, which is another good indication.

**NEW GREAT CONSOLS.**—R. Pryor, R. Trathen, March 18: Since Ellis's engine has been set to work we have drained the water a little over 12 fathoms below the adit level, and should the weather continue to be favourable, and no accident occur, we hope to fork the mine to the 40 fm. level in about a fortnight from this time, when we shall at once be in a position to set a great many tribute pitches. The pitman and six sumpmen are busily engaged in fixing bearings and doing the necessary work in the engine-shaft; the engine is working splendidly, and forking the water as fast as can be expected. Every effort will be made so as to reach the bottom of the mine as soon as possible.

**NEW TRELEIGH.**—S. Michell, March 19: You will perceive by the enclosed sketch of the 60 and 70, west of the new shaft, that we have passed the cross-course in the latter level, which we found very small; however, we have commenced rising in the back towards the winze under the 60 fm. level, and should the ground continue as at present we shall make a rapid progress. The winze when abandoned in consequence of the water would produce 2 tons of ore per fm. You will also perceive the length of ore ground gone down, by a pencil mark, below the level. The winze shown below the 70 is 13 fms. from the shaft, in which the lode is worth from 3 to 4 tons per fm., and the ore of better quality than it was above the level. Here we were prevented from sinking by the means of the water. The pencil mark at this point also denotes the ore ground down. The lode at the bottom of the new shaft has become so porous that it has let out much water; that our present lift is not sufficiently large to keep the water without impeding the progress of sinking; and in order to remove this impediment, we are now sending down a large one, which I hope to complete by Saturday morning. We have castings on the mine, and it is to be hoped that the work will be accomplished with but trifling expense in new gear. The shaft is producing good stones of ore, and there are strong indications of the lode improving as it goes down. I mentioned in my former report that we are obliged to keep the lifts working in Nicholson's shaft, which they continue to do, and the men that are looking after the pitwork are now engaged stopping the bottom of the 10, west of the shaft, where the lode will yield 1½ ton of ore per fm., which will leave a profit to the mine on their working. We intend sampling a small parcel of ore next week, but can hardly say the quantity will weigh to-morrow.

**NEW WHEAL LOVELL.**—Charles Lovell, Joseph Friske, March 19: The lode in the 40 east has turned out the last 6 ft. driving 23 cwt. of tin, or worth at least 60l. per fathom. The lode in the present end is better than we have ever yet seen it. No alteration in any other part of the mine since the meeting.

**NEW WHEAL TOWAN.**—R. Pryor, March 18: I set the adit end to drive west again on Friday last by four men, at 6l. per fathom. The lode continues just the same as when last reported on.

**NORTH DOWNS.**—G. R. Odgers, J. Harris, March 17: The 60 fm. level west is again improved, now worth 16l. per fathom. This confirms our opinion expressed in last week's report, that the falling off in the value of the end was only temporary. We have communicated the rise in the back of this level with the winze in the bottom of the 50, which has opened up a good section of ore ground, and ventilated the two levels. The stope in the back of this level is worth 12l. per fathom. The 50, west of shaft, is worth 6l. per fathom. The stope in the bottom of the 50, west of shaft, is worth 12l. per fathom. The 50, west of point of horse, on the south branch, is worth 10l. per fathom. No change to notice in any other part of the mine since last report. We calculate to sample on Wednesday next, March 25, about 125 tons of good quality ore.

**NORTH POOL.**—J. Vivian and Son, F. Clymo, March 19: Ballarat lode maintains its large size and improving character as we approach the junction with the main lode in the 40, and, according to the past bearing of the two lodes, this junction will be reached in driving the level named about 5 fms. further, where it seems likely that an important discovery may be made. In the 40, east of sump, on the main lode, there is a good rib of copper ore on the south side, which appears to be improving. In the same level west the lode is increasing in size, and producing ore, which appears to be on the increase. We have unabated confidence that this mine will prove to be highly productive and profitable, and that by a little further development improvements will be met which will greatly enhance the value of the concern.

**NORTH TREKERRY.**—R. Pryor, J. Trengon, Thos. Jenkin, March 19: Engine-shaft: The lode in the 120, west shaft, has, within the last day or two, undergone a very favourable change; it is now worth 2½ ft. wide, composed of malleable, and spar, with stones of copper ore, and the lode is letting out a quantity of water.—Treidler's Shaft: The lode in this shaft, sinking below the 130, is 4 ft. wide, worth for tin and copper 5l. per fathom, with every appearance of a further improvement. The lode in the 130, east of shaft, is 3 feet wide, producing stones of copper ore, and the end is nearing the bunch of copper ore driven through in the level above, so a great change may be daily expected. The lode in this level, west of shaft, is producing 1 ton of copper ore per fathom. The lode in the 120 east is 4 ft. wide, worth for tin and copper 5l. per fathom; the end is letting out a quantity of water, which is a good indication. The lode in the three stope in back of this level is worth on an average 11l. per fathom. The lode in the winze sinking below the 100, and east of shaft, is worth 2 tons of copper ore, or 11l. per fathom. All other places without change.

**NORTH WHEAL CHIVERTON.**—W. Hancock, March 17: The engine-shaft is sinking 2 fms. 1 ft. below the 90, and the lode is showing a good quantity of malleable, and spar, with stones of copper ore, and the lode is letting out a quantity of water.—Treidler's Shaft: The lode in this shaft, sinking below the 130, is 4 ft. wide, worth for tin and copper 5l. per fathom, with every appearance of a further improvement. The lode in the 130, east of shaft, is 3 feet wide, producing stones of copper ore, and the end is nearing the bunch of copper ore driven through in the level above, so a great change may be daily expected. The lode in this level, west of shaft, is producing 1 ton of copper ore per fathom. The lode in the 120 east is 4 ft. wide, worth for tin and copper 5l. per fathom; the end is letting out a quantity of water, which is a good indication. The lode in the three stope in back of this level is worth on an average 11l. per fathom. The lode in the winze sinking below the 100, and east of shaft, is worth 2 tons of copper ore, or 11l. per fathom. All other places without change.

**NORTH WHEAL CHIVERTON.**—W. Hancock, March 17: The engine-shaft is sinking 2 fms. 1 ft. below the 90, and the lode is showing a good quantity of malleable, and spar, with stones of copper ore, and the lode is letting out a quantity of water.—Treidler's Shaft: The lode in this shaft, sinking below the 130, is 4 ft. wide, worth for tin and copper 5l. per fathom, with every appearance of a further improvement. The lode in the 130, east of shaft, is 3 feet wide, producing stones of copper ore, and the end is nearing the bunch of copper ore driven through in the level above, so a great change may be daily expected. The lode in this level, west of shaft, is producing 1 ton of copper ore per fathom. The lode in the 120 east is 4 ft. wide, worth for tin and copper 5l. per fathom; the end is letting out a quantity of water, which is a good indication. The lode in the three stope in back of this level is worth on an average 11l. per fathom. The lode in the winze sinking below the 100, and east of shaft, is worth 2 tons of copper ore, or 11l. per fathom. All other places without change.

**OLD GUNNISLAKE.**—



**THE DUCHY OF CORNWALL.**—The account of the receipts and disbursements of the Duchy of Cornwall for 1867 has just been issued. The following are the principal items:—Rents and profits of courts, including arrears, including the produce of royalities, £1,000; mines and quarries in the counties of Somerset and Devon, including arrears, £3,711; annuity received from Consolidated Fund in lieu of the carriage duties, &c., 16,264; dividends on stock, 17,844; the total amount of receipts, 80,786. The disbursements are:—Payments made to His Royal Highness's use, 54,927; repairs and improvements to the Duchy, 1,000; deductions under various Acts of Parliament, including the moiety of the salaries of officers of the Stannary Court of Cornwall, 51,881; miscellaneous, 28,667; expenses of management—salaries of the principal officers and clerks in London, less 609s., net produce of the Duchy Fund of the officers, 54,577; local expenses of management, 2,574; fees and other incidental travelling expenses of principal officers, 4,097; salaries and other incidental expenses, 6,857; total 75,291. The total payments amount to 72,161. Balance in the hands of the bankers on revenue account on Dec. 31, 1867, 82,527; in the hands of agents, &c., 3837.—86,355. The principal receipts shown in the capital account are:—Sales of estates, rent, &c. (including payment of 1862, from the Falmouth Dock Company for the site of the docks, and 8500s. from the Metropolitan Board







be judged of from the circumstance that it is already quoted at 1½ to 1¼ prem.; and with regard to the progress made in the construction of the line, and its probable success, the reports are most satisfactory. On Tuesday, Mr. Charles Waring, M.P., the contractors, and the engineers of the line, made a thorough examination of the condition of the works. The line of the Metropolitan Railway from Kensington, via Paddington and Moorgate-street, to Tower-hill is well known, and the route which the Metropolitan District Railway will take from Tower-hill (Trinity-square) will be readily understood from the statement that there will be stations at Mark-lane, King William-street, Cannon-street, Bridge-street (Blackfriars), Norfolk-street (Strand), Charing-cross terminus, Houses of Parliament, Victoria station (Pimlico), Sloane-square (Chelsea), Cromwell-road (Kensington), and Gloucester-road, when it will again join the Metropolitan Railway. There can be little doubt that before the end of June the service between Paddington and the Houses of Parliament will be established; and when completed to the City the line will certainly not be less extensively patronised than the present Metropolitan Railway.

At the Truro Ticketing, on Thursday, 3611 tons of ore were sold, realising 16,214 10s. The particulars of the sale were:—Average standard, 119 12s.; average produce, 6; average price per ton, 44 9s. 6d.; quantity of fine copper, 218 tons 12 cwt. The following are the particulars of the sales during the past month:—

Tons.	Standard.	Produce.	Per ton.	Per unit.	Ore copper.
20,000	119 12s.	6	44 9s. 6d.	10	30
10,000	119 12s.	6	44 9s. 6d.	10	30
5,000	119 12s.	6	44 9s. 6d.	10	30
2,500	119 12s.	6	44 9s. 6d.	10	30
1,250	119 12s.	6	44 9s. 6d.	10	30
625	119 12s.	6	44 9s. 6d.	10	30
312	119 12s.	6	44 9s. 6d.	10	30
156	119 12s.	6	44 9s. 6d.	10	30
78	119 12s.	6	44 9s. 6d.	10	30
39	119 12s.	6	44 9s. 6d.	10	30

Compared with last week's sale, the standard is about stationary. The Standards of Tin Ore were advanced on Wednesday, and are now as follows:—Common, 86s.; superior common, 87s.; fine, 88s.; superior fine, 89s.

At Great Wheal Vor United Mines meeting, on Wednesday (Mr. George Noakes, F.G.S., in the chair), the accounts made up to the present time showed a credit balance of 5324 9s. 3d. A dividend of 2205 10s. (7s. 6d. per share) was declared, leaving a balance of 3118 19s. 3d. to be carried forward to the credit of next account. Details in another column.

At Craddock Moor Mine meeting, on Thursday, the accounts showed a debit balance of 207 16s. 8d., and a call of 6s. per share was made. The agents reported on the various points of operation, and expect to have about 155 tons of copper ore to the credit of the next account.

At New Pembroke Mine meeting, on March 10, the accounts for four months ending December showed a debit balance of 528 7s. 2d. A call of 2s. per share was made. Captains F. Puckey, J. Puckey, J. Whitburn, and A. Cundy say:—“The prospects of the mine are now such that we strongly recommend a new shaft being sunk with as little delay as possible, in order to intersect the lode at the 120 ft. level.”

At Par Consols Mine general meeting, on March 10 (the Rev. Dr. Trevelyan in the chair), the accounts for the four months ending December showed a debit balance of 2903 1s. 9d. Captains F. Puckey, G. Job, J. Whitburn, and A. Cundy say:—“Within the next four months we expect to cut the lodes both in the 50 and 40 ft. level cross-cuts, and the accounts for the past four months show that our returns have nearly met the costs of the mine.”

At Wheal Trelawny meeting, on Tuesday (Mr. Nicholson in the chair), the accounts showed a debit balance of 395 1s. A call of 15s. per share was made. Details in another column.

At North Levant Mine meeting, on March 14, the statement of accounts showed a debit balance of 748 6s. 10d.; but the capital account having been credited with the 1000l. charged to the Stennick Mine, there remains to the credit of the adventurers of North Levant 261 13s. 2d. Capt. Bennetts and Thomas say:—“It is very evident that we have a very fine piece of mining property, judging from the geological position of this mine and the number of lodes it contains, and these opinions of ours have often been corroborated by the most practical and experienced miners of the day, and that the mine will work for ages to come. Our sales of tin for the ensuing six months will be considerably increased, and we believe we shall soon be able to work so as to remunerate the shareholders for their outlay.”

At the Mywyndy Iron Ore Company meeting, on March 14 (Mr. Charles Capper, M.P., in the chair), a dividend of 2s. per share was declared. Details in another column.

At the Anglo-Argentine Mining Company general meeting, on Wednesday (Mr. H. Haymen in the chair), the Chairman stated that the meeting had been called in pursuance of the clause in the Act of Parliament, but as Mr. Barnard (their manager) had not as yet taken possession of the property, there was nothing to communicate to the shareholders beyond the information already conveyed to them. In reply to a shareholder, the Chairman said that there were upwards of 28,000 shares subscribed for, including the 15,000 to Major Richard, which, on his (Major Richard's) own proposition, he had agreed to take, in lieu of cash. The directors had no doubt but that amount would be sufficient for fully developing the property, as they did not intend to devote the whole of their attention to mining, but to include, to a great extent, the purchasing of ores from the natives, and thus become, as it were, the mint of the district. Samples of these ores, and those being produced from the company's mines, were on the table for inspection by the shareholders. It would be premature for him (the Chairman) to say anything respecting the value of the property until legal possession of it was obtained, but he trusted that at the first annual meeting the shareholders would admit that the directors had not overrated the prospects of the property. A cordial vote of thanks to the Chairman closed the proceedings.

The Bank of England return for the week ending on Wednesday evening showed in the ISSUE DEPARTMENT an increase in the “notes issued” of 117,635 1/2, represented by a corresponding increase in the coin and bullion on the other side of the account. In the BANKING DEPARTMENT there is shown an increase in the “rest” of 467 1/2, and in the “public deposits” of 1,071,102 1/2, together 1,075,779 1/2, a decrease in the “other deposits” of 588,476 1/2, and in the “seven day and other bills” of 28,752 1/2, together 617,228 1/2—488,549 1/2. On the asset side the account there is shown an increase in the “Government securities” of 4083 1/2, and in the “other securities” of 205,179 1/2—209,262 1/2; and, deducting this from the increase on the other side of the account, there remains an increase in the total reserve of 219,287 1/2.

On the Stock Exchange Mining Shares have been in active request during the week. The following prices were officially recorded in British Mining Shares:—West Caradon, 8½; Providence, 26½; Tincroft, 14½; Devon Great Consols, 44 1/4; Clifford, 53 1/4; West Chiverton, 65 1/4; East Caradon, 3½; Great Wheal Vor, 19—In Colonial Mining Shares the prices were:—Yudanamatana, 1 13-16ths, 1½; Scottish Australian, 1 1-16th, 1½; Port Phillip, 1 5-16th, 1½; Cape Copper, 10—In Foreign Mining Shares the prices were:—Chonates, 3½, 3½, 4, 3½; Don Pedro, 2½, 2 7-16ths, 2½, 2 11-16ths, 2½, 2½, 2 7-16ths prem.; Linares, 2½; Pestarena, 2½; St. John del Rey, 19½, 18½, 20½, 19½, 20½, 19½, 18½; United Mexican, 1 9-16ths; Rossa Grande, 1-16th dis.

COAL MARKET.—The fresh arrivals this week only number 105 ships. The demand for all kinds of coal has been steady at the quotations of last week. Hetton Wallsend, 18s. 6d.; South Hetton Wallsend, 18s.; Hartlepool Wallsend, 16s. 3d.; Original Hartlepool Wallsend, 18s.; Framwellgate Wallsend, 14s. 6d.: 26 cargoes unsold; 40 ships at sea.

EXPORTS OF COAL.—By the Monthly Circular of Messrs. Higginson, Liverpool, we learn that the quantity of coal exported in Feb. was 581,687 tons, against 611,467 tons in the corresponding month of 1867, showing a decrease of 29,780 tons. The particulars are:—From the Northern Ports, 257,589 tons; Yorkshire, 14,755 tons; London, 4576 tons; Liverpool, 52,057 tons; Severn Ports, 210,827 tons; and Scotch Ports, 41,863 tons. The increase was—London, 1220 tons; Liverpool, 1325 tons; Severn Ports, 17,544 tons. The decrease—Northern Ports, 44,416 tons; Yorkshire, 3612 tons; Scotch Ports, 1841 tons. Total, Jan. to Feb., 1,176,138 tons; corresponding month last year, 1,127,027 tons: showing an increase of 49,111 tons.

COAL CONTRACT.—The Admiralty require the supply of 1000 tons of South Wales (smokeless) Coal, for Her Majesty's ships at San Paulo de Loando.

SEAMEN'S CLOTHING.—The Admiralty are inviting tenders for the supply of various articles used in the manufacture of seamen's clothing, the list of which will be found in the advertising columns of this day's Journal. Amongst the articles required are 13,000 gross of white metal buttons, 500 gross of crown and anchor middling, and 250 gross of crown and anchor small. The tenders are to be sent in before Monday, April 6.

COPPER TRADE.—Messrs. Vivian, Younger, and Bond (March 20) write:—“The transactions which took place during the first fortnight of the current month absorbed the parcels of West Coast produce which were obtainable at the market price, and have been had without a further rise in prices. On Monday the mail from Valparaiso was delivered, bringing the intelligence of charters having been effected during the second half of January, comprising 1860 tons of fine copper, of which 1600 tons were bars. This caused some second-hand holders to be more disposed to sell, and 90 tons of a good brand by the mail as rather favourable for the immediate future of the metal, and have not pressed anything on the market. The consequence has been a pause in transactions. At Havre, however, as well as in Paris, business has been done at a higher proportionate price than above named, and the market has reassumed a firm aspect, several buyers of spot parcels having yesterday appeared at 155 frs. per 100 kilos, (the equivalent of 7½ in Liverpool), whilst no sellers could be found

under 187-50 frs., equal to 73½ usual Liverpool cash terms. A cargo of regulus, to arrive at Swansea, was taken by smelters at 15s. Early in the week 100 tons of Wallaroo were sold at 82½ prompt three months, and a few small parcels at 81½ cash, which latter is the price asked.

Vice-Chancellor Malins has appointed Mr. Snell (F. B. Smart and Snell, accountants) liquidator of the Tamar Bank Granite Company (Limited).

AUSTRALIAN UNITED GOLD MINING COMPANY.—The allotment letters were issued yesterday. Mr. Kitto will probably start for Victoria next month to complete the transfer of the properties, and commence the works.

GEOLOGICAL SOCIETY OF LONDON.—March 11: Prof. T. H. Huxley, LL.D., F.R.S. (President), in the chair. John Pigot, The Elms, Utting, Maldon, Essex, was elected a Fellow. The following communication was read:—“On the Structure of the Crag-Beds of Norfolk and Suffolk, with some Observations on their Organic Remains.—Part I. Coralline Crag, by Joseph Prestwich, F.R.S., F.G.S., &c.

On Wednesday the following papers will be read:—1. On some New Forms of Palaeozoic Corals, by Henry Woodward, F.Z.S., F.G.S.—2. “On the Corals of the Coast of the Bay of Fundy,” by Dr. A. Leith Adams, F.G.S.

RAILWAYS, AND THEIR MANAGEMENT.—At the Society of Arts, on Wednesday, Mr. R. F. Fairlie, C.E., read a paper on this subject, the object of which was to direct attention to his system of constructing engines, which he stated would turn any curve and ascend any gradient, and for which he claimed many advantages. Mr. Fairlie said that he had at present at work on a Welsh railway engines without tenders, where the fuel and water were highly conducive to the power, economy, and safety of the engine. The paper was well received, and the opinion of the meeting appeared to be that, if the suggestions were practicable, a saving might be effected by their adoption. The Chairman (the Marquis of Clanricarde), in proposing a vote of thanks to Mr. Fairlie, expressed himself in favour of the system, and considered it particularly applicable to Ireland, where they much require cheapness and efficiency combined.

THE IRON TRADE IN FRANCE.—The depression in the iron trade does not appear to be confined to this country, for it appears that the great foundries of Nantes are to be closed on April 11, notice having been given to the clerks and workmen that “the introduction of English, Belgian, and Swedish iron duty free, by the traffic ‘in permits,’ is the ruin of most of the forges of France, and especially of those situated on the West Coast. Mr. Fairlie, in his paper, expressed his opinion that the introduction of such a system would be attended to, and the free traders following up their system of the destruction of our national work, it is impossible to continue the working of iron at Nantes, and to support the losses which must now follow the carrying on of such business. In consequence of the decision of a meeting of the shareholders of the company of Basse-Indre, the forges of Nantes will cease working on April 11. The directors, therefore, give notice to all employed by them that their engagement will cease on that day.”

THE AMERICO-ABYSSINIAN WELL TUBE AND BORER.—The perfect efficacy of this invention, with some recent important improvements, was practically and most successfully illustrated by Mr. J. L. Norton, on Saturday last, at the Devon Ditch, in presence of a large number of gentlemen scientifically and commercially interested in its performance. Space permitting, we shall give a full description, with diagrams, in next week's Journal.

COAL SALESMAN.

WANTED, an ENERGETIC PERSON to undertake the SALE OF WARWICKSHIRE COALS IN THE LONDON AND OTHER MARKETS. Security will be required, as well as good references as to character and capability. The party would be required to devote the whole of his time to the sales of the coals of one colliery. Applicants to direct to “P. A.” Post Office, Coventry.

TO STEAM BOILER MANUFACTURERS.

WANTED, a Person to MAKE a STEAM BOILER on a NEW PLAN, that would SAVE ONE-HALF the present CONSUMPTION of COAL, and BURN ITS OWN SMOKE. Apply personally to Mr. JAMES HARBERT, No. 32, Waterloo-street, Kidderminster.

TO ENGINEERS AND COLLIERY PROPRIETORS.

WANTED, by a Young Man, an ENGAGEMENT as SURVEYOR. Surveys accurately, both surface and underground, and is a neat draughtsman. Address, “M. S.” MINING JOURNAL Office, 26, Fleet-street, London, E.C.

WANTED,—FIVE GENTLEMEN WILLING TO INVEST TWO HUNDRED POUNDS each, for PLACING an extensive SLATE AND SLAB QUARRY IN NORTH WALES in a REMUNERATIVE STATE. The present proprietors are willing to accept a small percentage as their interest on all profits realised over 10 per cent. The property has been favourably reported on by some of the best authorities in the kingdom. All particulars may be had from Mr. EDMUND SPARGO, Mining Engineer, Llanerchymedd, near Bangor.—March 18, 1868.

WANTED, by a PRACTICAL MINER, aged 29, who has had three years' experience, a SITUATION as MANAGER. No objection to go abroad, or under a railway company. Unexceptionable references. Apply to “X. Y. Z.” Post-office, Stoke Climsland, Callington.

WANTED, by the Advertiser, A GENTLEMAN to JOIN HIM IN OPENING a RICH TIN LODE. The lode has been proved for 200 fms. in length, and immense quantities of rich tin have been raised only a few feet from surface. It is the richest tin lode in the district. All particulars can be had by applying to “A. B.” MINING JOURNAL Office, 26, Fleet-street, London.

WANTED, FOUR THOUSAND POUNDS, upon SECURITY of an EXCELLENT COLONIAL COLLIERY. Apply, with real name and address, to J. H. HOWARD, Esq., solicitor, Quality-court, Chancery-lane.

WANTED, a CORNISH PUMPING ENGINE (second-hand) from 70 to 80 in. cylinder, in good working order. Apply, stating price, maker's name, and how long at work, to Mr. MATTHEW WINTER, Haydon Bridge, via Carlisle.

WANTED, a FITTING SHOP and FOUNDRY, with MACHINERY, suitable for GENERAL ENGINEERING WORK, capable of employing about fifty men. Apply, by letter, to Mr. J. GRAPTON JONES, M.E., Blairston, near Newport, Monmouthshire.

A PARTNER WANTED, to join a Firm, who can, if required, speculate from £300 to £400 to SEARCH for GOLD in one of the most promising lodes in NORTH WALES, about three miles north of the Clowau Gold Mine. For particulars, apply to Mr. SAMUEL FERNELL, Main Offerau Slate Quarry, Dolgarthau, Festiniog, North Wales.

A Gentleman experienced in the laying out of Mining Plant: the Construction, Erection, and Maintenance of all Pumping and Winding Engines; Machinery for Washing Coal and Dressing Metalliferous Ores; practically acquainted with Locomotive, General Railway, Millwright, and Foundry Work: IS OPEN TO AN ENGAGEMENT as GENERAL or ASSISTANT MANAGER. Has held a similar position for many years. Address, “G. L.” care of John Horsley, Esq., Metal Broker, St. Ann's-square, Manchester.

TO CLOSE A TRUST.—ON SALE, about ONE HUNDRED HOLYWELL, FLINTSHIRE. The shares are fully paid up—namely, £1 per share—and must be sold. Apply to Mr. LEWDARD, Crypt Chambers, Chester.

MINE SHARES FOR SALE:—50 Prince of Wales, 53s.; 25 Chonates, 44½; 10 Chiverton, 8s.; 50 Wheal Grenville, 31s.; 50 East Grenville, 30s.; 20 South Curdrow, 3s. 6d.; 2 West Chiverton, 26s.; 5 West Caradon, 27½; 5 Clifford, 25½; 3 St. John del Rey, 17½. Apply to H. TURNER, 11, Cross-lane, St. Mary-at-Hill, E.C.

CHONATES GOLD AND SILVER MINING COMPANY (LIMITED).—The Advertiser has FOR DISPOSAL FIVE HUNDRED FULLY-PAID SHARES in the above. Address, first instance, “S. W.” 58, Charles-street, Westminster.

WEST GODOLPHIN.—AN OFFER WANTED FOR FIFTY or ONE HUNDRED SHARES in this DIVIDEND MINE. No bona fide bids refused. Apply to “G. G.” Post-office, Bloomfield-street, E.C.

ON SALE, a QUANTITY OF CONTRACTORS' MATERIAL, consisting of ballast and earth wagons, barrows, dobbins, single and double purchase crabs, &c.; tank locomotives, 10 in., 12 in., and 15 in. cylinders; rails, double headed, 70 lbs. and 72 lbs. per yard; bridge rails, 24 lbs. and 40 lbs. per yard; chairs, fish-plates, bolts, sleepers, and spikes. For prices, &c., apply to J. B. COOPER, Shrewsbury.

FOR SALE, TWO 10-ton WAGONS, nearly new, with extra strong wheels, springs, and axles. Apply to Mr. J. RUGLEN, Barnley.

FOR SALE, a PORTABLE STEAM ENGINE of 25 horse power. Winding gear to order to suit circumstances. SECOND-HAND PORTABLE STEAM ENGINES, with new MORTAR MILLS, SAW TABLES, &c., on advantageous terms. Apply to Messrs. BARROWS and CARMICHAEL, Engineers, Banbury, Oxford.

60-inch Cylinder Pumping Engine for Sale. 60-inch, a 60 in. cylinder PUMPING ENGINE, with 10-ton BOILER. The engine must be sold, and a low price will be accepted. Apply to Mr. THOMAS JAMES, Engineer, St. Agnes, Cornwall.

BIRMINGHAM FINANCIAL COMPANY (LIMITED), OFFICES.—WATERLOO STREET, BIRMINGHAM. CAPITAL,—HALF A MILLION. Reserve fund, £12,000.

ADVANCES made upon approved real and other securities. DEFERRED PAYMENTS on Wagon Leases and other contracts purchased, or advances made thereon. HENRY ALLBUTT, Secretary.

#### AMERICAN MINES.

MR. R. P. ROTHWELL, Mining Engineer and Metallurgist, OFFICE,—WILKES-BARRE, PENNSYLVANIA, U.S. Having a LARGE EXPERIENCE IN EUROPEAN AND AMERICAN MINES, can FURNISH RELIABLE INFORMATION on the VALUE of MINERAL PROPERTY in any part of the UNITED STATES or the dominion of CANADA.

#### MINERAL LANDS OF NOVA SCOTIA.

INTERNATIONAL MINING AGENCY, OFFICE, SOMERSET HOUSE, PRINCE STREET, MAIL ADDRESS, BOX 266, G.P.O., HALIFAX, NOVA SCOTIA. A. HEATHERINGTON, PROPRIETOR.

A Register kept of every description of Mineral Lands and Mining Shares for Sale.—Properties Viewed and Reported on, and their Purchase or Sale, when required, negotiated for a moderate commission.—The services of Explorers, Overseers, &c., engaged for Mine Owners.—Maps, Diagrams, Statistics, and useful information regarding each district supplied.—Returns made for absent proprietors.

#### COURTESY SLATE WORKS, DEVON.

TO BE SOLD, the LEASE and the COMPLETE PLANT, consisting of STEAM ENGINE, PUMPS, DRAWING GEAR, &c., of the above works.

The property is held under a lease of 21 years from the Earl of Devon, on most advantageous terms. It consists of 65 acres, containing five veins of slate, one of which has been worked for upwards of one hundred years. It is situated on the Salcombe river, within four miles of the sea, and vessels of 80 to 100 tons can be landed without any carriage, and is within a few yards of the highroad to Kingsbridge and Dartmouth. New works have been opened two years back on the above ground, producing slate of first-rate quality, equal to the Welsh in colour, &c.

Samples may be seen, and further particulars known, at the offices of Messrs. SCOBELL, 115, Leadenhall-street, London, and on the works.

The lease having been completed, the proprietor is willing to dispose of the whole of his interest, or will retain a half, continuing the management for mutual benefit, being on the spot, and as a guarantee for their security.

Any party having two to three thousand pounds will find this a safe investment, and one of the most profitable, as few returns are equal to those of a slate quarry, and an increase of capital is sought for by the proprietor, for the purpose of extending the works.

#### LEAD ORES.

Date.	Mines.	Tons.	Amount.	Purchasers.
March 17	Stipstones	70	£11 13 0	Peter Glover
18	Plympton	40	11 8 6	Walker, Parker, & Co

#### BLEND.

Date.	Mines.	Tons.	Price per ton.	Purchasers.
March 11	Stipstones	40	£4 0 6	Kenrick and Son.

#### BLACK TIN.

Date.	Mine.	Tons.	Price per ton.	Purchaser.
March 5	Prosper United	6 17 2	£2 15 0	R. R. Michell.
—	ditto	1 1 22	40 0 0	42 17 10—ditto
—	—	—	Extra carriage, 19s. 10d.	—
14	Pedn-an-drea	8 0 1	10	4 14 3—Bissoc.
16	Great Wh. Vor	36 12 1	0	3197 0 6—

#### THE COPPER TRADE.

Messrs. J. Pitcairn-Campbell and Co. (Liverpool, March 14) write:—After the issue of our last report a considerable business, both speculative and otherwise, took place in English and foreign copper, at a further advance in price. As high as 82½ was paid for best select, and up to 74½ for arrival; and 72½ for the spot for Chili bars. A little reaction has since set in, and the market closes quietly at our quotations. Furnace material continues very scarce, and holders are very firm. Quotations are 73½ for bars, 76½ for Ingots, 14s. 9d. to 15s. for bars and regulus, 15s. to 16s. 3d. for Corocoro Barilla. Business transacted during the fortnight comprises on the spot here 665 tons bars at 72½, 73½, 10s., 820 tons Ingots 73½, to 76½, 490 tons regulus, and 129 tons ore at 14s. 9d. To arrive here 490 tons bars at 72½, 10s., to 74½, 570 tons regulus, and 400 tons ore at 14s. 10½d. to 15s. On the spot, at Swansea, 230 tons Ingots at 75½, 10s. to 75½, 10s., and to arrive at Swansea, 665 tons regulus and 390 tons ore at 15s.; 800 tons Australian ore sold at 14s. 3d.

Arrivals here during the fortnight:—Atheletan, from Lota, 300 tons bars, 200 tons Ingots; Glen Udal, from Brebre, 242 tons ore, 545 tons regulus; Bolivia, from San Antonio, 150 tons bars; Warwickshire, from Valparaiso, 150 tons bars, 50 tons Ingots; Hermine, from Valparaiso, 430 tons regulus.—At Swansea, Alpha, from Valparaiso, 30 tons bars; Margaret Longton, from Carrizal, 340 tons ore, 360 tons bars; Arica, from Caldera, 450 tons regulus; San Fernando, from Coquimbo, 100 tons bars. Stocks of copper (Chilian and Bolivian) in first and second hands, likely to be available, are—

	Regulus.	Bars.	Ingots.	Barilla.
Liverpool	1594	1344	1769	270
Swansea	1067	—	327	470
Total	2662	1344	4953	2259

Representing about 8500 tons fine copper, against 7500 tons fine copper March 1867, 10,300 tons fine copper, March 14, 1866, and 5500 tons, March 14, 1865.

#### COPPER ORES.

Sampled March 4, and sold at the Royal Hotel, Truro, March 19.

Mines.	Tons.	Price.	Mines.	Tons.	Price.
Devon Great Consols.	129	£4 9 6	Wheal Creake	60	£3 5 0
ditto	126	5 15 0	ditto	41	3 11 0
ditto	124	5 7 6	ditto	40	6 5 6
ditto	122	5 0 0	East Caradon	71	3 17 6
ditto	121	3 11 0	ditto	64	4 14 0
ditto	120	3 11 6	ditto	55	2 5 0
ditto	119	5 4 0	Bedford United	103	3 1 6
ditto	116	5 8 0	ditto	41	4 0 0
ditto	113	5 14 0	ditto	18	5 12 6
ditto	110	3 19 6	Prince of Wales	42	8 14 6
ditto	103	3 19 6	ditto	48	6 5 6
ditto	99	4 17 6	ditto	46	8 0 6
ditto	92	2 5 6	Wheal Friendship	73	2 13 0
ditto	73	1 6 6	ditto	46	8 5 0
ditto	60	5 9 6	Wheal Emma	54	2 0 0
ditto	55	2 19 0	ditto	59	5 2 6
ditto	46	2 15 6	ditto	13	10 3 6
ditto	43	1 7 0	Gunnislake (Clitters).	51	5 2 0
ditto	41	4 1 0	ditto	42	5 2 0
ditto	39	13 5 6	Devon and Cornwall.	57	4 5 6
ditto	8	6 12 0	ditto	23	2 1 6
Marke Valley	90	3 7 6	East Russell	50	3 11 6
ditto	81	2 14 0	ditto	20	4 6 6
ditto	75	5 15 0	W. Maria & Fortescue	49	2 6 0
ditto	73	6 3 6	ditto	30	4 17 6
ditto	72	7 18 0	Wheal Russell	42	6 16 0
ditto	49	2 10 0	Collacombe	9	3 11 6
Wheal Creake	70	3 5 0	Fursdon	6	2 10 6



## WATSON BROTHERS' MINING CIRCULAR.

WATSON BROTHERS,  
MINING AGENTS, STOCK AND SHARE DEALERS, &c.  
1, ST. MICHAEL'S ALLEY, CORNHILL, LONDON.

MESSRS. WATSON BROTHERS beg to notify to their friends and the public generally that Mr. W. H. CUELL has retired from the firm, in accordance with a clause in the deed of partnership; and having also sold to the remaining partners all his right, property, and interest in the business hitherto carried on by J. Y. WATSON, F.R.S., N. WATSON, F.R.S., and WATSON, and himself, under the name of "WATSON AND CUELL," the same will be carried on in future by Mr. J. Y. WATSON and Mr. N. F. WATSON, under the designation of "WATSON BROTHERS," and they take this opportunity to return their most sincere thanks for the great patronage bestowed and confidence reposed in the firm for 24 years, and to assure their friends and clients it will be their earnest endeavour to merit a continuance of both.

Messrs. WATSON BROTHERS have made arrangements for continuing their weekly Circular, which has had a large circulation for many years, to the columns of the *Mining Journal*, their special reports and remarks upon mines and mining, and state of the share market, will in future appear in this column.

In the year 1843, when Cornish mining was almost unknown to the general public, attention was first called to its advantages, when properly conducted, in the "Compendium of British Mining," commenced in 1837, and published in 1843, by Mr. J. Y. WATSON, F.R.S., author of "Gleanings among Mines and Miners," "Records of Ancient Mining," "Cornish Notes" (first series, 1862), "Cornish Notes" (second series, 1863), "The Progress of Mining," with statistics of the Mining Interest, annually for 21 years, &c., &c. In the Compendium, published in 1848, Mr. WATSON was the first to recommend the system of a "division of small risks in several mines, ensuring success in the aggregate," and Messrs. WATSON BROTHERS have always a selected list on hand. Perhaps at no former period in the annals of mining has there been more peculiar need of honest and experienced advice in regard to mines and share dealing than there is at present; and, from the lengthened experience of Messrs. WATSON BROTHERS they are enabled to offer, thus publicly, their best services to all connected with mines or the market, as they have for so many years done privately, through the medium of their own Circular.

Messrs. WATSON BROTHERS transact business in the purchase and sale of mining shares, and other securities, payments of calls, receipt and transmission of dividends, obtaining information for clients, and affording advice, to the best of their knowledge and judgment, based on the experience of more than 30 years active connection with the Mining Market.

Messrs. WATSON BROTHERS also inform their clients and the public that they transact business in the purchase and sale of railway, docks, insurance, and every other description of shares dealt in on the Stock Exchange.

Messrs. WATSON BROTHERS are also daily asked their opinion of particular mines, as well as to recommend mines to invest or speculate in, and they give their advice and recommend mines to the best of their judgment and ability, founded on the best practical advice they can obtain from the mining districts, but they will not be held responsible, nor subject to blame, if results do not always equal the expectations they may have held out in a property so fluctuating as mining.

Messrs. WATSON BROTHERS having agents and correspondents in all the mining districts, and an extensive connection among the largest holders of mining property, have the more confidence in tendering their advice on all matters relating to the state and prospects of mines and mining companies, and are able to supply shares in all the best mines at close market prices, free of all charge for commission.

"A SHAREHOLDER."—The shaft at South Herodsfoot is now down about 93 fms., and the hole will be cut at the 100, in ground that can scarcely fail to make ore. Shares have been in demand for some days, and are, we think, likely to advance. Herodsfoot, on the same hole, has been paying 5000*l.* a year in dividends for some years.

"QUOTATIONS."—The Stock Exchange quotes Chontales 4½*l.* paid, the Mining Exchange 5*l.* paid, and this accounts for the discrepancy in the quotations referred to by our correspondent.

SATURDAY, MARCH 14.—Good demand to-day for West Chiverton, West Frances, Seton, Carn Brea, Chiverton Moor, and Clifford. Prince of Wales, 55*l.* to 57*l.* 6*d.*; Chiverton, 65*l.* to 70*l.*; Chontales Gold, 3½*l.* to 4½*l.*; Great North Laxey, 15*l.* to 20*l.*; Great Wheal Vor, 18½*l.* to 19½*l.*; Wheal Grenville, 29*l.* to 31*l.*; West Frances, 27½*l.* to 30*l.*

MONDAY.—Market active for Chontales at an advance of 10*s.* per share. West Chiverton, Chiverton Moor, West Frances, Clifford, and Carn Brea also in demand at an advance. Chontales, 4½*l.* to 4¾*l.*; Prince of Wales, 55*l.* to 57*l.* 6*d.*; West Chiverton, 65 to 67½*l.*; West Frances, 26 to 28; Wheal Buller, 12½ to 15; Chiverton Moor, 6½ to 7; Wheal Grenville, 30*s.* to 32*s.* 6*d.*; Grambler and St. Aubyn, 5 to 6.

TUESDAY.—Active demand for Chontales at a further advance. Chiverton Moor, West Frances, Clifford, and Carn Brea are enquired after. Chontales, 4½*l.* to 4¾*l.*; Chiverton Moor, 6½ to 6¾*l.*; West Chiverton, 65 to 67½*l.*; West Frances, 27½ to 30; Grenville, 30*s.* to 32*s.* 6*d.*; Clifford, 6 to 6½*l.*; Prince of Wales, 54*s.* 6*d.* to 56*s.* 6*d.*; East Caradon, 3½ to 4; Great Vor, 18½ to 19½; Seton, 85 to 87½*l.*; Buller, 12 to 14.

WEDNESDAY.—The market is not quite so active to-day. Chontales shares are a shade flatter. Prince of Wales shares firm at quotations. Chontales, 4½ to 4¾*l.*; Prince of Wales, 53*s.* to 55*s.*; Chiverton Moor, 6½ to 6¾*l.*; West Chiverton, 64 to 66; West Frances, 27½ to 30; Grenville, 33*s.* to 35*s.*

THURSDAY.—Market dull, Chontales better at 4½ to 4¾*l.*. Grenville, 33*s.* to 35*s.*; West Frances, 29 to 31; Chiverton Moor, 6½ to 6¾*l.*; Prince of Wales, 53*s.* to 55*s.*; South Herodsfoot, 10*s.* to 15*s.*

FRIDAY.—Market rather quiet. Prince of Wales, 53*s.* to 55*s.*; Chontales, 4½ to 4¾*l.*; Mary Ann, 21 to 22; Seton, 85 to 90; West Seton, 195 to 205; Chiverton Moor, 6½ to 6¾*l.*, chiefly dealt in.

THE ELECTRIC TELEGRAPH.—It is a remarkable fact that there are almost invariably several claimants to a discovery, whether scientific or industrial, and the electric telegraph forms no exception to the general rule, the dispute between Messrs. Cooke and Wheatstone as to the right to the honour of the first introduction having continued as warm to the present day as at the time it commenced—more than a quarter of a century ago. A volume has just been issued (through Messrs. Simpkin, Marshall, and Co., Stationers' Hall-court), discussing the "Authorship of the Practical Electric Telegraph of Great Britain," by Mr. THOMAS FOTHERGILL COOKE, M.A. Inventions of the greatest ultimate value are so frequently brought forward in a comparatively crude state, and the several steps necessary for perfecting them are usually so imperceptibly small that where more than one person is interested it is extremely difficult to define the exact proportion of merit due to each; yet there is a line, not always very marked, where an invention passes from an ingenious suggestion to a valuable application of skill, and it is usual to give the honour of originating to the man who first passes the line mentioned. Upon this principle the honour of originating our railway system is given to George Stephenson, although many had previously suggested, and even used, short lines; and, although the modifications introduced since Stephenson was first engaged on the Liverpool and Manchester have done much to change the entire aspect of our railways. In connection with electric telegraphs, the first who passed the line was undoubtedly William Fothergill Cooke, and the improvements in practical electric telegraphy since introduced are but modifications of the system inaugurated by him. Sir Charles Wheatstone probably worked as laboriously as his partner after they became associated with each other, but this proves nothing as regards the originating of electric telegraphic communication. Mr. Cooke claims, in 1840, to be the first to have telegraphed, to be "the original projector of the practical telegraph," and the inventor equally and jointly with himself, standing in point of merit upon precisely the same ground, and the justice of this claim Sir Charles Wheatstone has never disproved, so that Cooke may be considered to occupy the same position in connection with the electric telegraph as does Stephenson in connection with the railway system.

THE MONETARY COMPANIES OF LONDON.—A very useful little volume, being the sixth half-yearly issue of "The London Banks, Credit, Discount, and Finance Companies," has just been published by Mr. Utley, of Threadneedle-street, showing their directors, managers and secretaries, capitals and reserve funds, dividends and bonuses, shares and transfer forms, meetings and board days, and the situation of their offices. There are also given lists—each in alphabetical order—of discount brokers, financial agents, &c., of directors of the banks, credit, discount, and finance companies, of the partners in London private banks, and of the managers and secretaries of London banks. The value of the book is much enhanced by an able summary of the latest reports of the companies referred to, and worthy of very general patronage by men of business.

THE MINES OF THE RIO TINTO.—A very interesting volume has just been issued in Spain, entitled "Minas de Rio Tinto: Estudios sobre la Explotación y el Beneficio de sus Minerales," by Don Ramon Rúa Figueroa, Mining Engineer. The first portion of the work, which is divided into two parts, consists of practical scientific notices of the working of the Rio Tinto minerals, and the treatment of them by the process of cementation; whilst the second refers to the description of the smelting of the richer ores, and the economic results. The work will be more fully referred to in a future notice.

GOLD MINING IN NOVA SCOTIA.—In reviewing the mining operations of the last year Mr. Robert Robertson, the Chief Commissioner of Mines for the Province, in his report to the Lieut.-Governor, observes that they have caused both for congratulation and regret. In the gold mining, the success may be considered good, both in the increase of gold obtained and the average rate per ton of quartz crushed; whilst the average remuneration for each man "counting 315 days in the year, and the gold at \$18.50 per oz.," is \$24.44 cents per day—a result believed, without a parallel in any country. Although the yield of gold, when compared with some gold-producing countries, may appear small, the progress has been steady. In the year ending Dec. 31, 1867, the amount raised was 6787 oz., and for year ending Sept. 30, 1867, it was 27,583 oz. And this progress, considering the number of paying mines in the old district, and the promising localities outside of these districts that have been found during the past year, will, he believes, be fully kept up; and when too, we consider that between Cape Sable and Cansuau we have a gold-bearing country over 250 miles long, and fully 25 miles wide, in every part of which as productive mines may be found as any now worked, we cannot but believe that the gold mining of Nova Scotia is only in its infancy. We may also expect a large increase in the working of the poorer mines; leads are now operated upon profitably which, at the commencement of mining operations, could not have been worked, except at a loss, and there is no doubt that with the increased experience in mining, and in separating the gold from the ores, many leads now deemed worthless will be worked; and though under the present system of manipulation the profits are large, yet it is well-known that a large percentage of the gold contained in the quartz is not saved.

COMPANIES WINDING-UP.—It has been held by the Lord's Justices, in *The Metropolitan Railway Warehousing Company (Limited)*, that when a winding-up petition is presented the Court of Chancery should, as far as possible, either make an order to wind-up the company, if it be a fit case, or dismiss the petition; for, if the petition be adjourned, and a winding-up order should be ultimately made, the winding-up would date back to the presentation of the petition, and void, or imperil, anything done by the company in the meantime.

## Notices to Correspondents.

Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be filed on receipt: it then forms an accumulating useful work of reference.

EARLIER PUBLICATION OF THE MINING JOURNAL.—To meet the wishes of a large number of subscribers, arrangements have been made to publish two hours earlier than heretofore. By this improvement the *Mining Journal* can be delivered in Birmingham, Bradford (Yorkshire), Huddersfield, Leeds, Liverpool, Manchester, Salisbury, Southampton, and Wolverhampton by mid-day at latest, or from four to six hours earlier than previously. Subscribers in the metropolitan districts should likewise receive the Journal by the first morning delivery, and any complaint of their not doing so will be at once attended to.

NEW QUEBRADA COMPANY.—Information is desired from the secretary of this company for the benefit of many shareholders, which if he would kindly give in the columns of the *Mining Journal* would be much appreciated. It is—Why was the railway made from Tucacas instead of using the River Arica, which was said to be navigable as far as Palma-Sola. The original programme was to have the railway made from this place, using the river for the conveyance of all suitable materials, and commencing it at Palma-Sola, carry it forward to Las-Hacha, in the neighbourhood of the mines. Supposing the river really to be navigable to the extent mentioned, this appeared to be a very feasible and judicious course; and why it was departed from we are curious to know.—B.

ADVERTISING PRICES OF MINE SHARES.—Seeing an advertisement in last week's Journal, offering a number of shares in New Wheal Lovell at 11*s.* per share, I wrote a friend to make personal application for them, and the following is his reply:—" (as usual) is not a seller of the shares." Surely there ought to be a remedy to compel parties so advertising to deliver the stock offered.—CHARLES BAWDEN.

LEAD SMELTING.—"F. W. P."—I am not at liberty to communicate the particulars of Mr. Foster's process, further than I have already done.—M. E.

ON THE WASTE OF MINERAL AND OTHER NATURAL PRODUCTS.—In the concluding sentence of my letter in last week's Journal, I find some omissions have inadvertently been made, which gives the statement an air of absurdity and improbability. It should read—"From 6 to 8 gallons of fish oil, worth on an average 3*s.* 4*d.* per gallon, is also obtained by compression from 1 ton of salt mackerel, capelins, or cod offal." Cod deprived of its liver and offal yields little or no oil.—W. T. RICKARD, F.C.S.: 2, Crown-chambers.

BWICH-Y-PLYM LEAD MINE.—Can any correspondent oblige by communicating some information respecting the company formed for working this property—its position and prospects?—T. B.

\*\* We have a few volumes of the MINING JOURNAL for 1867, neatly bound, which can be had, price 30*s.*, either direct from the office, or through any bookseller or news agent.

## THE MINING JOURNAL.

Railway and Commercial Gazette.

LONDON, MARCH 21, 1868.

## TECHNICAL EDUCATION.

Although the importance of scientific knowledge to practical men can scarcely be over-estimated, it has been generally felt that to attempt to make technical education compulsory upon all persons indiscriminately would be very objectionable; and in the *Mining Journal* of Oct. 12 last it was pointed out that the machinery of the Royal School of Mines might advantageously be availed of for affording the advanced scientific instruction required. It is satisfactory to find that the Committee of Council on Education have, in their minute just issued, fully endorsed that view; whilst the general arrangements for the Science and Art Examination have been so modified as to secure, to all who seek it, facilities for the acquisition of the necessary primary technical education. In order to assist the artisan classes who may show an aptitude for scientific instruction, the Committee resolve to aid local efforts in founding scholarships and exhibitions. The scholarship is intended to maintain the student while remaining at the elementary school, and the exhibition to support him while pursuing his studies at some central institution, where the instruction is of a high grade.

The Department will grant 5*l.* (an elementary scholarship) towards the maintenance of a deserving student to the managers of any elementary school who undertake to support him for one year, and subscribe also at least 5*l.* for that purpose. The conditions are that only one such scholarship be granted to schools of less than 100 students, and one additional for each additional 100; that the scholarships be awarded in the absolute terms of which will be left to the managers of the school, subject to the approval of the Department; that the scholar shall be an artisan or "poor student" between 12 and 16 years of age; that he shall not be the teacher, pupil teacher, or other paid servant of the school; that he shall continue regularly to attend the day school; and that he shall pass in some one or more branches of science at the succeeding May examination of the Department, after which the Department grant of 5*l.* will be paid. These grants will be made from year to year on condition that the student shall pass in a higher grade of the same subject, or in a new subject, in which he first passed. It will be for the locality to determine for how many years the student may hold the scholarship, but in no case can he be allowed to hold it for more than three years.

The Department will grant 10*l.* (a science and art scholarship) towards the maintenance of a student at an elementary school who has taken a first grade in Freehand or Model Drawing and Elementary Geometry, and passed in one of the subjects of science. The conditions are that one scholarship be granted to the 100 scholars (as above); that the scholarship be awarded to the most successful students in the school; that the scholar be an artisan or "poor student" between 12 and 16 years of age; that he be not the holder of an elementary school scholarship, nor the teacher, pupil teacher, or other paid servant of a school; that he continue regularly to attend the day school, and obtain at least a third class in the subject of science in which he has already passed, or pass in some other subject; and that in each year of holding the scholarship he shall pass, either in a higher grade of the same subject, or in a new subject.

The Department will grant 25*l.* (a local exhibition) per annum to the managers of any school or educational institution, or any local committee formed for the purpose, who will raise the like sum by voluntary contribution for the maintenance of a student at some college or school where scientific instruction of an advanced character may be obtained. The exhibition may last one, two, or three years. The conditions are that the exhibition shall be awarded in competition, in one more branches of science at the May examination of the Department. The managers may select any branch or branches of science for the competition, and if more than one be taken they may fix any relative amount of marks they consider best to assign to them. The place where the student is to pursue his studies may be fixed by the managers, subject to the approval of the Department. If a Government institution be selected, such as the Royal School of Mines or Royal College of Chemistry, London, or the Royal College of Science, Dublin, the fees of the student will be remitted. The exhibitor must be of the artisan class or a "poor student." The grant of the Department will be paid from year to year on condition that a like payment has been made by the managers or local committee, and that the student has pursued his studies satisfactorily according to regulations fixed by the Department.

It will be seen that this minute creates three descriptions of prizes for the encouragement of science, instruction, and for the support of students of the industrial classes while continuing their education. The science subjects in which the Department aids instruction are:—

PRACTICAL PLANE AND SOLID GEOMETRY.  
MACHINE CONSTRUCTION AND DRAWING.  
BUILDING CONSTRUCTION, OR NAVAL ARCHITECTURE AND DRAWING.  
ELEMENTARY MATHEMATICS. HIGHER MATHEMATICS.  
THEORETICAL MECHANICS. APPLIED MECHANICS.  
ACOUSTICS, LIGHT, AND HEAT. MAGNETISM AND ELECTRICITY.  
INORGANIC CHEMISTRY. GEOLOGY. ORGANIC CHEMISTRY.  
MINERALOGY. ANIMAL PHYSIOLOGY. ZOOLOGY.  
VEGETABLE PHYSIOLOGY AND ECONOMIC BOTANY. SYSTEMATIC BOTANY.  
NAUTICAL ASTRONOMY. STRAM. PHYSICAL GEOGRAPHY.  
MINING. METALLURGY. NAVIGATION.

In order to place a school or class in connection with the Science and Art Department, a committee consisting of at least five persons must be formed, and undertake certain duties of superintendence in connection with it. The payments to the teachers vary from 1*l.* to 5*l.* according to the class in which the student is placed. There are five classes, the fifth being the lowest. The payments are only made for the instruction of students of the artisan or weekly wages class, and those whose incomes are less than 100*l.* per annum. The teacher to be qualified to earn payments on results must have taken a first or second class, unless he has obtained some University degree. The examinations are held in May. The examination in each subject is held over the whole kingdom on the same night. It is not necessary to enable a class to be examined and obtain prizes, &c., that a teacher should be certificated. If a satisfactory committee be formed, any class or single student can be examined however taught. Prizes, which, with some few restrictions, are open to all students, are given to those who obtain a first, second, or third class. To the best in each subject are given a gold, a silver, and two bronze medals. Six Royal Exhibitions of the value of 50*l.* per annum, tenable for three years, are given in competition at the May examinations. Three of these are to the Royal School of Mines in London, and three to the Royal College of Science in Dublin. Free admissions are given to the courses at these institutions to all who take gold medals.

With regard to the establishment of science classes in elementary schools, it is provided that the managers of an elementary school under inspection can permit their premises to be used for science teaching provided that there be no interference with the primary purpose of the elementary school or its three attendances. A science class may thus be formed in connection with and receiving payments from the Science and Art Department. But no payments are made

to teachers on account of science teaching in respect of any instruction in science that may be given during the three attendances of an elementary school receiving aid from the Department. In an elementary school not under inspection, and, therefore, not receiving State aid to elementary instruction, science classes may be formed in connection with the Science and Art Department, without any restriction as to the time or manner in which the instruction in science may be given.

## THE TRADES UNION COMMISSION—THE REPORT.

The report of the Special Commissioners deputed by the Royal Commission on Trades Unions to enquire into outrages, &c., in Manchester and the adjacent districts has just been issued. It is difficult to imagine any form of words which could in so short a space, and in so clear a manner, state all the evils and iniquities of the Trades Union system. A considerable number of violent personal outrages upon non-Union masters and men are reported, chiefly by the bricklayers' and brickmakers' Unions, and the Commissioners report that they were all deliberately planned and executed in furtherance of a system which had for its object the subjection of both masters and men to the rules of the Union, and the destruction of freedom of labour; that sometimes a resolution was passed that the outrage should be committed, but whether that happened or not, the opinion of the meeting was unmistakably ascertained. The carrying out of the resolution was left to the officers, who had the funds at their disposal for the purpose, who contracted with some "trustworthy" dual, who found men to perpetrate the outrage. The amounts paid varied from 1*l.* to 20*l.*, and were entered in the books as "certain expenses," or a lump sum, without any explanation for what the money had been spent, and the auditors so well understood the matter that such accounts were always passed. The outrages so paid for include the destruction of thousands of pounds worth of property by violence and fire; the beating of non-Union workmen, leaving them for dead (in one case with broken limbs and smashed head, and in another when a man was murdered, the defence of the murderers was paid for by the Union); the throwing of infernal machines through the bed-chamber windows of non-Union men, endangering not only their lives, but the lives of wives and children. In brief, the catalogue of these crimes is so extensive, so diabolical, and so utterly reckless of life and limb, that it reads more like a few pages of the cruelties of the buccaners of three centuries ago, or of Italian banditti.

Besides the outrages connected with the brick trade, there is a statement of the doings of a colliers' and ironfounders' Union. At Messrs. KNOWLES, Little Lever, near Bolton, they employed about 3000 non-Union hands in their collieries. In November, 1866, 1400 of their men joined the Union, and struck. Other men were obtained from distant districts, beds being provided for them temporarily in the storehouse for oil, tallow, and hemp, and close by was that for gunpowder and gun-cotton. The Unionists set this place on fire whilst the new comers were asleep in bed, and the outrage was only discovered just in time to save their lives, but 800*l.* worth of damage was done. Afterwards two men were beaten, and left for dead. This strike cost the Union 16,000*l.*, and 80 of the men who left are still out of work, and receive pay from the Union. In August, 1866, the ironfounders of Bolton demanded a rise of wages. Mr. JONATHAN EDGE (who employs about 70 hands) refused, and the Unionists left; he obtained other men, but his premises were picketted, and the new men had to be escorted to and fro by the police, and some were severely beaten. Another employer, Mr. MARSDEN, was similarly treated, but he retaliated by sending a list of the names of Unionists to the Masters' Association, and many of them had been unable to get work since.

It is obvious from these facts that some repressive measures must be adopted by the Legislature. Isolated outrages, arising from trade disputes, are disgraceful to modern civilisation, but organised cruelty and bloodshed, spoliation and murder are a shameful reproach to the laws of the land. If these things are to be tolerated the boasted liberty of Englishmen is but a bygone name; and what is of equal importance, it will be impossible for the capital of this country, great as it is, to compete with that of less favoured countries, where, however, labour is free. Some restrictive measure is requisite as much in the interests of the men as of the masters, for the great mass of workmen are the slaves of a few of the noisier and more worthless, who by terrorism and craft dominate in the secret councils and the more open meetings of their fellow-workmen. Mr. GATHORNE HARRY is an able statesman—he has already linked his name with an improved administration of the Poor Law—but if he can devise some measure which shall protect the men from the tyranny of their own class, and emancipate capital from such a clog to its free and profitable employment, he will be the greatest benefactor to his country this generation has yet seen. If he—if the general wisdom of Parliament—fail in this, a gloomy future awaits us. The report just presented makes no suggestions as to remedial measures, but it furnishes an important portion of that overwhelming array of facts which render repressive legislation an imperative necessity.

## WEIGHING COAL.

The total produce of the collieries of the United Kingdom in 1866 was, according to the reports of the Inspectors, 100,728,881 tons; but according to Mr. R. HUNT, in his Mineral Statistics, 101,630,543 tons. This gives us a difference between the two authorities of 901,662 tons—a difference of scarcely any significance in respect of such a large quantity, and tending rather to prove than disprove the accuracy of each authority separately. Whilst, however, Mr. HUNT gives us a larger aggregate output than the Inspectors, still he is below the Inspectors' returns in respect of South Staffordshire. At one time he was very much below, but we know that a short time ago the "Statistics" advanced very considerably one year upon the quantity set down for the year before. The advance was larger than would have resulted from any increase in the ordinary working of the collieries, and was the result either of a revision of the basis upon which the previous calculations had been made, or of more complete information obtained from the colliery proprietors. Notwithstanding this advance there is still a considerable difference between the returns of the Government Inspector and the Government statistician in respect of the total coal produce of South Staffordshire, Mr. BAKER (the Inspector) setting down a larger quantity than that recorded by Mr. HUNT. The Inspector, in his last report, is careful to state his quantity (10,300,000 tons) are statute tons of 2240 lbs., and that it includes 1,350,000 tons which he estimates as "Colliers' allowance coal, colliery consumption, and waste." Mr. HUNT, also, is precise in notifying how the South Staffordshire coal is disposed of, and shows the quantity used in the ironworks, the quantity carried out of the district by the London and North-Western and the Great Western Railways respectively, the quantity used in the towns, the colliery consumption, and the quantity used for brick-making, glass manufacture, &c.

Both Mr. BAKER and Mr. HUNT agree as to the colliery consumption, each setting it down at the figure we have already mentioned (1,350,000 tons); still they are unable to make their returns tally. Although the difference is not so marked now as a few years ago, yet it is still very perceptible, and is of considerable interest at a time when we are endeavouring to arrive at accuracy in our returns in respect of all the different departments of our national industries. Both Mr. HUNT and Mr. BAKER pursue separate methods in arriving at the results which they set forth, and each method seems to be of a complete character; and there is no cause of complaint so far, as we are aware that the colliery proprietors are refraining from affording all the information they are able.

The difference shown in respect of South Staffordshire does not exist in other districts, and, consequently, becomes curious as well as important. There must, of course, be a reason. It is, no doubt, due to the very loose method which has for so many years been in vogue in South Staffordshire, of estimating the quantity of coal sold from the collieries into boats, for use in the district, and sold alike to iron-makers and other manufacturers, and to dealers who supply the domestic market. The question has, within the past few days, been taken up by the chartermasters in that part of Mr. BAKER's district whence most of the thick coal is obtained. It is the custom to assume that the canal boats will hold a certain quantity, and a boatload is supposed to be 21 or 25 tons, as the case may be, and at that rate the buyer is usually charged. It is well known, however, that in the majority of instances he gets much more than he pays for. So



notorious is the fact, that it will be possible to find collieries at which there are returns of the quantities sold into boats, and the actual quantities which these boat-loads really represent. The difference is in every such case of actual comparison much against the vendor and in favour of the vendee. But at a time of good trade, if they should be brought up to the colliery wharf, they are refused to be loaded till the boats of lesser dimensions are supplied. In one case a boat purported to hold about 25 or 26 tons; but the experienced eye of the proprietor soon detected that it really held very much more, and he quickly told the boatman he would take care he did not leave the wharf without his proper load. The boat was unloaded into two other boats, which after, by the gauge, revealed that the fellow had been supplied with 38 tons, whilst he was only expected to pay for 25, and yet he had been dissatisfied. The present time of bad trade has called out these large boats again, in larger proportions than heretofore, but it happens that the thick coal is, by its increasing scarcity, becoming very valuable, even in South Staffordshire itself. More objection than heretofore, therefore, is being raised by proprietors and butties to the practice. The chartermasters allege that the boats that are now coming to the collieries will carry nearly double the quantity that a fair boat will hold, yet they have been so artfully constructed that they will gauge for only a few tons more. Colliery proprietors and chartermasters are, therefore, taking steps in certain instances to weigh the coal into the boats. We should be glad to hear of the practice becoming universal. It is high time that it was adopted. Our mineral wealth is of too much value, and the expense incidental to its winning too heavy, for colliery proprietors to be able to afford either to give away willingly or to be defrauded of their property. The proper method—that of weighing the coal—if it should be once adopted in South Staffordshire, would put an end to the difference in the returns of the aggregate mineral product of that part of the kingdom—one which, in respect of the quantity raised, stands third upon the list of the 14 coal-producing districts of England, Wales, and Scotland—and thereby materially assist in the accuracy of coal returns.

#### PRUSSIAN MINING AND IRONWORKS COMPANY.

In the *Mining Journal* of August 24 last a short notice appeared, translated from the *Berliner Boersen Zeitung*, which gave some account of the then state of the works at the collieries and ironworks of the above-named company. Since that time considerable progress has been made, and important results achieved, which cannot fail to stamp the undertaking as an eminently successful one. The following particulars (contained in a letter dated Düsseldorf, March 17) may be relied upon as correct, having been obtained from the best informed sources. At the Erin Colliery, near Castrop, one of the two shafts reached the surface of the coal measures at a depth of 112 fms. in the month of November, and is now sunk to a total depth of 135 fms., at which level the upper set of stone drifts has been commenced, and four seams of coal, varying from 24 to 62 in. in thickness, have been already cut through, dipping at an angle of about 50° to the northward. The second shaft is being rapidly sunk to the same level, and is already nearly 70 fms. deep. The construction and erection of the permanent engines for winding coal and pumping is so far advanced that it is expected all will be ready for coal work by the end of June next. As the workings in this colliery will extend over the best coking coal seams in the district, it is intended to build a large number of coke ovens on the colliery ground.

At Hansa Colliery, near Dortmund, where, at the time of the last notice, the great difficulties of the shaft sinking had just been overcome, the coal measures were also reached in the month of January at a depth of 76 fms., and since then two seams of superior gas coal have been sunk through, 3 ft. and 3 ft. 4 in. thick, lying at a very flat angle (about 7°), and thus establishing the fact that this colliery is situated nearly in the centre of a very wide basin of flat-lying coal, and that the seams which have been met with belong to the highest of the Westphalian formation, and consequently have all the other seams of the district below them.

At Zollern Colliery, where the operations had not been commenced in August last, the attempt to save the shaft, which had been abandoned by the former company in consequence of the enormous quantity of water met with in the sinking, has also been crowned with complete success within the last few days. The shaft here had been sunk to a depth of about 32 fathoms, when the water feeders then became of such a large size—being upwards of 600 cubic feet, or about 4000 English gallons, per minute—that the company to which the colliery belonged failed to complete the winning, and their funds becoming exhausted, they suspended operations in September, 1859. The colliery, upon which a very large amount of money had been expended, attracted much attention afterwards, owing to difference of views among the body of the shareholders, and was the subject of much discussion and correspondence in the *Mining Journal* as well as other papers about five years ago, when an attempt was being made to raise new capital and complete the works. The opinion was advanced by some parties that, if the colliery were to be taken up again, the present shafts and works should be entirely abandoned, and a new winning tried in a different place. Ultimately, the property was purchased by the Prussian Mining and Ironworks Company, on very cheap terms, and they have now succeeded, as already mentioned, in completely shutting off the water in one of the shafts; and as there is only a further depth of about 30 fms. to be sunk to the coal measures, it is likely that the colliery will be at work before the end of the present year. This winning being one of considerable interest in a professional point of view, some particulars relating to it will be given next week, which may be acceptable to the readers of the *MINING JOURNAL*.

#### THE RICHARDSON PROCESS OF IRON PUDDLING.

The RICHARDSON invention of Puddling Iron, as at present carried out by the aid of hollow rabbels instead of solid, through which a stream of cold air is forced (as more fully described in No. 1685, &c., of the *Journal*), is getting into favour as its results are becoming more generally known. The process, we are informed, has now crossed the Tweed, and before long there are pretty clear indications that it will have crossed the Atlantic. The fame of the invention has also reached France, Belgium, and Sweden, and other foreign makers and Governments are enquiring after the secret. At Jarrow, the Messrs. PALMER have made a successful trial of the virtues of the tubular rabbel, and, though under temporary and incomplete arrangements, the puddled bars produced exceeded their expectations. The Whittington Ironworks Company, Staffordshire, have had the puddled slabs drawn out into thin rods, which satisfied them that the iron was of superior quality; and two ingots are now being drawn out into wire by the White Cross Wire Company, at Warrington. At the Parkhead Forge, Glasgow, the acting partner is attaching the process to the whole of his puddling furnaces, after a most cautious and prolonged trial of the system, in the faith that it will realise continuously the result of his protracted experiments; and the enterprising proprietors of the Blochhorn Works are this week testing it, with the view to its adoption. At a time, then, when disquieting "rumours" are afloat about other countries outrivalling us in the economical manufacture of finished iron and its products, it is of the first moment—if we would lead the van—that every practical appliance which can cheapen the manufacturing process, or add to the quality of the article, should be eagerly and honestly tested, lest our apathy be taken advantage of by our Continental or American neighbours, and we be deprived of the full value of our own inventions. Mr. RICHARDSON is too much of an Englishman not to desire that the first fruits of his genius should be reaped by his own countrymen; and we have his authority for saying that he will be happy to arrange with ironmasters for testing his process for a limited period, free of charge, as he is fully assured that it will demonstrate its utility over the present method of puddling, by increasing the commercial value of the iron produced. It may be added that the cost of the experimenting apparatus, at works where there is an existing cold blast-engine, would only be a few shillings, and could be applied without interfering in any way with the ordinary puddling-furnaces, or with the routine of the work for an hour. At Jarrow, a piece of ordinary gas-pipe, and a few yards of gutta percha tubing, were improvised for the occasion, with the best results. Judging, then, from the above-noted extended experiments, and

the subjoined chemical analyses, the RICHARDSON process claims to make a more pure iron from inferior than was formerly obtainable from superior pig-iron—the iron giving a fully better yield; is more uniformly good; saves 120 to 160 minutes per day in the working; lessens the labour of the junior puddler; requires less constant supervision; and in no way injures either the fettling, the furnace, or the rabbels, beyond the ordinary tear and wear.

From the following analyses, made by men of eminence—Prof. MACADAM, of the Royal College, Edinburgh, analysed for Mr. RICHARDSON; and Mr. TOOKEY (Dr. PERCY's assistant) was employed by the Lowmoor Company, the greater purity of the RICHARDSON-made iron is evident:—

RICHARDSON'S PROCESS.			
Name of element.	Square bar.	Round bar.	LOWMOOR IRON.
Iron	99.569	99.648	99.372
Carbon	0.035	0.031	0.016
Silicon	0.076	0.075	0.122
Sulphur	0.025	0.028	0.104
Phosphorus	0.031	0.034	0.106
Manganese	trace	trace	0.230
Total	99.736	99.816	100.000

Of the tensional power of plate iron fabricated under this process, Mr. BEARDMORE, of Parkhead Forge, Glasgow, had it tested in NAPIER'S works, when it stood a strain of 27 tons to the square inch in the direction of the fibre, and 23.7 across the fibre. One of the first consignments of plates has been to a foreign Government, and Mr. BEARDMORE is sanguine that they will realise all his hopes of their superior excellence.

On Jan. 15 last an elaborate paper was read by Mr. DAY, C.E., of Glasgow, on the advantages of this process, before the Institution of Engineers in Scotland. After the reading of the paper a very learned discussion ensued, turning on the enquiry, how was the sulphur and phosphorus eliminated by the RICHARDSON process? A question of this kind does very well as a *cheval de bataille* for a learned society, but for all practical purposes it is valueless. One point, however, was fairly conceded, that the iron was superior; and, while leaving these gentlemen to prosecute their scientific investigations into how the obnoxious elements are removed, it must be satisfactory to the patentee to know that his invention is making way.

#### STATISTICS OF COAL.

The Blue Book just issued, containing reports of Her Majesty's Secretaries of Embassy and Legation respecting Coal, comprises accounts of the Belgian coal production, coal in China, coal in Japan, the Prussian coal production, the Wurtemberg coal consumption, and of the Zollverein coal. In Belgium there were 174 coal mines at work, and 112 idle; the amount of coal obtained being 12,774,662 tons, of the value of about 6,000,000. The Belgian coal industry is at present very prosperous. The net profit per ton was 1 fr. 97 c. in 1866, against 73 centimes in 1863, and the wages paid to pitmen has risen 23 per cent. within the last two years. With reference to the exhaustion of the coal mines, a subject to which attention has been turned in Belgium, no less than in England, the result of examination has removed the disquietude that had been entertained by many.

With regard to coal in Brazil the report is extremely unsatisfactory. The memorandum respecting coal fields in the province of St. Catherine's proves the coal, at least as far as already seen, to be of little commercial value. There is one 8 ft. seam, but the other four vary from only 1½ in. to 14 in.; whilst with regard to the quality of the coal, it leaves nearly half its weight (44½ per cent.) of ash, and only contains about 37 per cent. of fixed carbon.

In China, coal has been discovered at Pong-hou, the chief island of the Pescadores. Mr. SWINHOE, the British Consul at Amoy, writes that the coal will, no doubt, be the same that occurs in layers under the New Red Sandstone, interior of Canton, up the river in this district, and at Kelung. Sir RUTHERFORD ALCOCK, at whose instigation the exploration reported on by Mr. SWINHOE was made, writes that the fact of their persistent refusal to give facilities for the effectual working of their almost unlimited coal fields, petroleum wells, and other sources of inexhaustible wealth, is the more significant that never was a Government more poverty stricken, or put to greater straits for money. In the event of a revision of the treaties next (the present) year, he is convinced that nothing is to be gained worth serious effort if the authority to work mines and the introduction of railroads and telegraphs be refused, and in the present temper of rulers and people such concessions are certainly not to be looked for from negotiations based on respect for the absolute right of the nation or its sovereign to do as may seem best to themselves in the internal affairs of the country and the development of its resources.

In Japan, the coal mines at Iwami have been visited and examined by Mr. ERASMUS GOWER. He found the bed of coal from 4 to 6 ft. in thickness, consisting of very good bituminous coal, in places very pure, in others intermixed with slate, which is easily separated from it. The coal burns with a clear fire, makes very little ash, and does not choke the furnaces. The bed inclines slightly to the north-west, and is of such an extent as to be able to supply any demand made for many years. Its height above the level of the sea is about 290 ft., and the mouth of the main level is less than two miles from the sea shore.

In Prussia, the mineral industries appear to be progressing most satisfactorily. The quantity of coal to be obtained by the working of the coal pits of the River Saar would suffice for the supply of 3000 years, at the rate of 2,500,000 metrical tonnes per annum. The coal pits of the River Ruhr extend over 45 miles in length on the Lower Rhine. There were 65 strata of coal more than 20 inches deep, the united thickness of which gives a pure coal 210 feet. It has been estimated that the produce of these pits will last more than 5000 years, at the rate of 1,000,000 metrical tonnes per annum. In 1865 there were 409 pits at work in Prussia, producing 371,842,299 centners of coal, value 4,954,986.7; they gave employment to 89,192 persons. Of the 409 pits in work, 393 were in the possession of companies and private persons, and 16 belonged to the State. Of the coal sold, 28 per cent. went to the interior, 22 per cent. to the States of the Zollverein, 45 per cent. to France, and 5 per cent. to Switzerland. Hanover possessed 33 coal pits. The more considerable fields of brown coal were in the provinces of Saxony and Brandenburg. In 1865 there were 511 of these pits at work, producing 710,437.

By way of appendix, reports are given upon the production of coal in Tasmania and in Trinidad, and upon the coal resources of British India. In Tasmania workings have been successfully opened at the north end of the Douglas River coal field. Coal of good quality for steam purposes has been discovered on the east coast of South Brani Island, at Adventure Bay; and a bituminous coal of fair quality has been discovered near Hamilton. Coal deposits are reported in Trinidad; the finest quality was found at Point Noir; it burnt rapidly, with much flame, and little smoke.

The report of Dr. THOMAS OLDHAM, the superintendent of the Geographical Survey of India, is very complete. He shows that the British territories cannot be considered as either largely or widely supplied with coal. Extensive fields existed, but they were not distributed generally over the districts of the Indian Empire. Up to the present time little more than surface workings had been carried on. Specimens of coal from 74 localities showed that the average composition per cent. was—fixed carbon, 52.2; volatile matter, 31.9; and ash, 15.5; against an average composition of five English specimens—of fixed carbon, 68.1; volatile matter, 29.2; and ash, 2.7. He states that the very best coal of the Indian fields only touches the average of English coals, and that Indian coals are not capable of more than two-thirds, in most cases not more than one-half, the duty of English coals. These results of the quality of Indian coals would show the groundless nature of the hopes which have been expressed that the coal fields of India, Borneo, Australia, and New Zealand would not only contribute large supplies, but would also serve to coal the ocean steamers trading between Europe and those far distant regions. As far as Indian coal was concerned, Mr. OLDHAM feared it would never supplant the better fuel now obtainable elsewhere for ocean voyages.

**PIG AND PUDDLING IRON.**—The exports of pig and puddled iron from the United Kingdom made a considerable stride last year, having attained a total of 567,319 tons, as compared with 500,500 tons in 1866, and 547,641 tons in 1865. The exports declined last year to France, but

they increased to Prussia, the United States, and other quarters. The exports of pig and puddled iron will be seen to have decidedly increased during the last fifteen years, having amounted in 1853 to 333,585 tons; in 1854, to 293,432 tons; in 1855, to 291,776 tons; in 1856, to 357,326 tons; in 1857, to 422,086 tons; in 1858, to 363,143 tons; in 1859, to 316,376 tons; in 1860, to 342,566 tons; in 1861, to 388,004 tons; in 1862, to 441,708 tons; in 1863, to 466,423 tons; in 1864, to 465,985 tons; in 1865, to 547,641 tons; in 1866, to 500,500 tons; and in 1867, to 567,319 tons. The value of these exports was as annexed:—1853, 1,056,310.7; 1854, 1,244,853.7; 1855, 1,072,428.7; 1856, 1,385,118.7; 1857, 1,609,115.7; 1858, 1,084,170.7; 1859, 901,929.7; 1860, 974,065.7; 1861, 1,044,304.7; 1862, 1,203,641.7; 1863, 1,287,968.7; 1864, 1,412,352.7; 1865, 1,599,491.7; 1866, 1,542,145.7; and 1867, 1,660,026.7.

#### MINING, METALS, AND MINERALS—PATENT MATTERS.

BY MICHAEL HENRY,  
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Mr. W. R. DAWSON, of London, has specified a patent relating to the preparation of titaniferous iron-sand for smelting. In order to carry out this invention the patentee takes sawdust or wood, in small pieces or particles, and iron-sand, and mixes them together, using, if required, a small quantity of tar, to cause the sawdust or wood to adhere better to the sand. To this he adds sufficient small coal, either with or without pitch, to cause the sawdust or wood, when heated in a retort or coking-oven to the point of converting the said sawdust or wood into charcoal, to form an agglomerated mass, containing within it the titaniferous iron-sand. He prefers to wash the coal previous to its mixture with the above-mentioned substances, in order to free it from sulphur and other impurities. The substance produced in the manner above stated is then ready for the ordinary operation of smelting in a blast-furnace. The proportions of wood or coal employed in obtaining the above-named product may be varied according to the facilities of obtaining wood or coal respectively, and the quality of the iron eventually produced will greatly depend upon the larger proportion of wood to that of coal employed. If sawdust or wood in small particles alone be used, then the proportion would be in about 4 tons of wood to 1 ton of sand, with about 10 per cent. of pitch or tar; then for every ton of coal used in substitution for wood 2 tons less of sawdust or wood in small particles would be required.

Mr. W. J. PUGHLEY, of Llantarnam, has specified a patent for obtaining sulphuric acid from the refuse "pickle" or "liquor" used in wire and galvanising works. The refuse pickle or liquor, when no longer fit for use, is placed in a suitable vessel, and allowed to remain there long enough to permit such impurities as will settle at the bottom of the vessel to do so; the pickle or liquor will then become clear. The clear liquid is then conveyed into a leaden pan, placed on iron plates, with such brickwork as is necessary to support and protect the leaden pan, and, by means of heat, this is concentrated slowly until it has attained a specific gravity of about 1.250; after this the liquid is run into vessels, lined with lead, and allowed to remain therein four or five days to crystallise. The crystals thus obtained are sulphate of iron (commonly called copperas). The crystals are removed, and the mother liquor again put into a leaden pan, and allowed to evaporate as before; the liquid is then run into another vessel, and allowed to crystallise as before; after this, the liquid will be sulphuric acid, of a sufficient strength and purity to be used as pickle or liquor for the purposes above described, which it does as well and effectually as the ordinary mixture of sulphuric acid and water, although it is preferable, for regularity sake, to mix a portion of fresh sulphuric acid, as the latter alone would not be enough to constantly supply the requirements of the works.

Among recent applications for patents we note—Mr. A. C. KIRK, Glasgow, treating cast-iron.—Mr. E. CASPER, Cannon-street, supplying water to steam-boilers.—Mr. P. KOCOT, Manchester, machinery for making nut-like nuts.—Mr. J. JEAONS, Sheffield, tyres for railway and other wheels.—Mr. E. MOREWOOD, Cheam, coating metal plates.—Mr. JONES, Consett Ironworks, finishing, straightening, and punching rolled, railway, and other bars of iron and steel.—Mr. ATTWOOD, of Walsingham, producing steel and iron of a steely character.—Mr. THOMPSON, of Barking-road, iron castings.

#### REPORT FROM MONMOUTH AND SOUTH WALES.

MARCH 19.—Since last report there is little alteration to note in the Iron Trade of the district, but the feeling that the worst time has been experienced is being gradually strengthened, although it cannot be said that the stagnation which has so long prevailed has been relieved to any great extent. Quietness still characterises the home trade, and the improvement which was expected to have set in before this has not been realised, and this, no doubt, is the principal cause of the stagnation. The financial difficulties of the leading railway companies have kept many orders back; and until the public invest their money a little more freely, home contracts will be given out very sparingly. It is well known that the railway companies require considerable quantities of rails and other material, and the slight improvement which has already set in in the railway market has caused orders to be given out a little more freely, and for somewhat larger quantities. Considerable quantities of rails are now being shipped to the United States at the local ports, and vessels are wanted at Newport to convey iron to New York, New Orleans, Annapolis, Mobile, Dorchester, N.B., Port William, N.B., and Woolfville, N.B. Enquiries, however, have somewhat slackened during the last few days, and this, no doubt, is owing to the state of political affairs in that country, the impeachment of the President, now in course of proceeding, having had a material effect on the trading community. It is not quite clear what the result of this step on the part of Congress may be, but until the present complications are in a fair way of being settled, buyers will enter into transactions only for what is required for immediate use. Shipments of rails will shortly be made to Riga and Cronstadt, and will be rapidly followed by others to the Russian markets, from which enquiries are considered favourable as to future requirements. A large contract is shortly to be given out, and although Belgian house will use every effort to secure it, it is confidently believed it will come into the hands of makers in this district. From the continental markets enquiries are a little more numerous, and there are strong hopes of a steady trade being done during the spring and summer months. Pig-iron, of the best brands, commands a ready sale, and quotations are fairly supported. Two or three blast-furnaces are now in course of erection in the district, and there is a probability of this branch of the trade increasing. For Tin-Plates there is a good demand, and makers adhere firmly to list prices.

Steam Coal proprietors have a fair average number of orders on their books for the mail packet stations and French markets, considerable quantities being sent to the latter. Shipments, however, are not made so rapidly as could be desired, and this is owing to the disaffection existing among the colliers. This refers more particularly to Glamorganshire, where the colliers, although at work on the reduction, are far from satisfied, and the quantity of coal sent down for shipment is barely sufficient to meet the demand. Some of the men have given a month's notice that unless a more satisfactory arrangement is come to they will bring out their tools, and it is feared they will carry out their intention unless something definite is arrived at in the meantime. The Gadlys Colliery were at a standstill for a short time, owing to the hauliers, and others of similar class, refusing to accept the masters' terms. The men were willing to accept the 15 per cent. reduction, but they would not go in at a lower rate than that paid at other collieries. They met at the office on Tuesday, and deputations were appointed to visit collieries in different parts of the valley for the purpose of ascertaining the general wages paid for such work. It is satisfactory to find that an arrangement was speedily come to, as the men were in readiness to resume work on Thursday morning. In Monmouthshire matters have not improved during the week, and a number of the men continue on strike, although the terms of the reduction have been accepted, and they have expressed their willingness to meet the masters half-way, but the latter do not feel disposed to respond, as the injury they have sustained by the violence and intimidation of the workmen is something considerable. The manager of the Abercarn Pit has had an offer made him of any number of men—from 200 to 1000—from the Free Labour Society, and it is not at all improbable that the offer will be most readily accepted. The Rhos Llantwit Colliery proprietors have engaged about 200 Cornish miners, and some 20 of that number have arrived, for the purpose of ascertaining the rate of wages to be obtained, and if it turns out satisfactory the remainder will be speedily introduced. It is somewhat doubtful how the fresh hands will be received by the turn-outs, but every precaution will be taken to protect them from violence and intimidation. This step on the part of the masters is an exceedingly wise one, and the turn-outs will probably find out when it is too late that they have got into a dilemma from which they will not be able very easily to extricate themselves, without considerable difficulty and expense. At Risca some of the hands will remain out, and they have endeavoured to persuade the others to follow their example; but, as their efforts have been of no avail, they have resorted to intimidation and threats. On Saturday one of their number was brought before the Newport magistrates for the offence, but as there were not two magistrates present unconnected with the coal trade, the case was adjourned for a week. The colliers in the employ of the Ebbw Vale Company have given notice to leave their work at Cwmnauidur at the end of the present month. These men at first accepted the reduction, and there is no doubt they have been induced to give notice by the turn-outs.

Operations have been commenced at the Wyndham Pits, in the Ogmore Valley. The undertaking is an entirely new one, and it is believed the speculation will turn out profitable.

Owing to the colliers' strike in Monmouthshire the majority of the hands employed at the Machen Tinworks are unable to work for want of coals. About 250 of the workmen employed at the Taff Vale Ironworks, Treforest, have been on strike since the 7th inst. The works belong to the Aberdare Iron Company, and on pay-day a notice of a reduction in wages was given, which the men refused to accept, and on Monday they all turned out, and no arrangement has yet been come to.

At the Risca Widows and Orphans' Fund meeting, held at Newport (Capt. Foote, R.N., in the chair), the report of the Relief Committee, showed



that 350l. 18s. 1d. had been expended during the year 1867, as compared with 358l. 18s. 1d. in 1866. The balance in the hands of the treasurer at the end of the year, including the interest on the same invested, amounted to 2802l. 2s. There are now remaining 13 widows, 23 children, and 7 aged parents recipients of the fund, involving a weekly charge of 5l. 16s. The weekly payments decreased during the year from 6l. 9s. 6d. to 5l. 16s., and the number of recipients from 50 to 43. The committee adopted the plan of giving dowries to the widows who marry, the result of which has been that out of 51 widows on the fund seven years ago only 13 now remain.

At the Ferndale Colliery Explosion Fund meeting, on March 4 (the Rev. Dr. Price in the chair), a very complete and satisfactory balance-sheet was presented and passed. It appears that the amount received has been 11,885l. 11s. 6d., of which (during the 11 weeks ending Feb. 28) 341l. 2s. 6d. was distributed to 66 widows, 158 children, and 22 dependents; 246l. 18s. in advertising, travelling expenses, &c.; and 59l. to the honorary secretaries, leaving 11,247l. 11s. to carry forward. Subscriptions promised, estimated at 5566l. 19s. 1d., are not included in this account, so that the total subscriptions have been 17,452l. 10s. 7d.

At the Monmouthshire Railway and Canal Company meeting, on Wednesday, Mr. C. Bailey, M.P., in the chair, the report was adopted, and a dividend at the rate of 5 per cent. declared. The Chairman said the dividend would have been 5½ or 6 per cent., but for exceptional circumstances. It was agreed to subscribe 20,000l. towards the Newport Alexandra Dock as soon as 150,000l. had been subscribed, including the 20,000l. It was stated that only a portion of the entire dock scheme would at present be proceeded with, but it was not intended to abandon the larger undertaking. The estimated cost of the works now contemplated was 259,000l., and the dock would cover an area of 13½ acres.

The arrivals at Swansea include—the Spring, from Genoa, with 203 tons of copper ore, for H. Bath and Son; Margaret Loughton, from Carrizal Bay, with 355 tons of copper ore and 360 tons of copper regulus, for Cobre Company; Countess of Boetiva, from Cuba, with 540 tons of copper ore, for Richardson and Co.; Esmeralda, from Havana, with 332 tons of copper ore, for Richardson and Co.; Arica, from Caldera, with 196 tons of silver ore, 163 tons of copper ore, and 391 tons of ditto, for H. Bath and Son; San Fernando, from Coquimbo, with 100 tons of copper in bars, for H. Bath and Son; Flora, from Hondeklip, with 400 tons of copper ore, for Richardson and Co.; Rebe, from Carlotofte, with 370 tons of zinc ore, for H. Bath and Son; Courier, from Santander, with 350 tons of iron ore, to order; Sketty Belle, from Genoa, with 212 tons of copper ore and 40 tons of olive oil, for H. Bath and Son; Sonne, from Cagliari, 125 tons zinc ore, to order.

#### REPORT FROM NORTHUMBERLAND AND DURHAM.

MARCH 19.—The Coal and Coke Trades in Durham continue dull, with little animation, and consequently men are more plentiful than they have been for some years in this part of the district; it will, therefore, be readily understood that the men are rather eager to enter into the yearly engagements where they are to be had, and many of the collieries have engaged an increased number of hands in anticipation of improved trade shortly. The steam coal trade in Northumberland is rather more buoyant, and as the season advances there is little doubt that a good business will be done in this branch of the trade. A large quantity of steam coal will be taken from the Tyne, and other northern ports, this season by steam colliers, and those ships will return with cargoes of grain.

The Iron Shipbuilding Trade continues to improve, and the iron works generally are gradually, although not rapidly, getting into full work. At the extensive works at Jarrow there has been a marked improvement lately, and the men in most branches are working full time. At the Cleveland Iron Market, on Tuesday, there was a good attendance, and large sales were effected in most descriptions of iron, and stocks are reported to be decreasing. The quotations were—No. 1, 47s. 6d.; No. 3, 43s. 6d.; No. 4, 42s. 6d., nett cash. No further information has come to hand respecting the making of steel from the Cleveland iron. The general tone of the market was certainly hopeful; there was a good demand for plates and angles, and the stocks of pig-iron are decreasing. Great satisfaction was expressed at the intelligence that the Stockton and Darlington Railway Company had given notice that the reduced rate for the conveyance of rails, &c., from the Middlesborough district alongside ships in Liverpool had been agreed to, and would for the future be the rate charged. This arrangement places the Middlesborough ironmakers, as regards railway charges, on a footing of equality with their Welsh competitors.

Economy in the use of steam is of the greatest consequence in connection with collieries, ironworks, &c.—that is, in the consumption of coal, oil, &c.; and in connection with this we may mention that "Storer's patent open-top suet lubricator" is to be introduced into this district. The makers of this simple and excellent lubricator are Messrs. Nettleford and Chamberlain, of Birmingham. It appears that the instrument has been already largely introduced into the Midland district, and, from excellent testimony, with the best results. It is given as the result of careful experiments that by this lubricator, as compared with those consuming tallow, a saving is effected of 70 per cent.—a very important item, and one well worth consideration. Mr. William Galloway and Co., of Gateshead, has been appointed agents for this lubricator, and careful experiments are about to be made, in order to determine its merits. The result of those experiments will be given when they are completed.

#### REPORT FROM SCOTLAND.

MARCH 19.—There has been a nice balancing of probabilities between buyers and sellers in our Pig-Iron market this week, and fractional changes have taken place, as the one or the other considered the market likely to be influenced in their favour. On Monday and yesterday there was a tendency to weakness, although a good business was done; and the same feeling pervaded the market to-day, when only a few sales were effected at 52s. 9d. cash, closing nominally at this price. No. 1, g.m.b., 53s.; No. 3, 51s. 6d.; Coltness, 59s.; Gartsherrie, 57s. 6d.; Summerlee, Calder, and Glengarnock, 55s.; Eglinton brands, 53s. The shipments during the last two weeks are more nearly approaching those of the corresponding weeks of last year than the shipments of the previous months, and those to foreign parts are on an average of former years. The aggregate returns show 9940 tons sent foreign and coastwise from all the Scotch ports, against 11,430 tons in the same week of last year; but of this 6625 tons went direct to foreign countries, against 8145 tons in the corresponding week of 1867. The furnaces now in blast are 106, against 98 at the same date last year; but the cheapness of Cleveland iron is interfering both with our shipments and our home consumption. At a meeting of the ironmasters, this forenoon, it was agreed that in future each master should regulate, as he pleased, the number of furnaces in blast at the respective works; and this liberty has been given, it is understood, with the view of putting a number of the furnaces out of blast into immediate operation. In finished iron there is not a single new feature to report, either in price or demand. Parkhead plates, 8½ to 17½, in which range of prices are included those manufactured out of iron puddled by the new "Richardson process," a notice of which appears in another column. Heavy forgings (Parkhead forge) are quoted at 75s. per cwt. The other descriptions of iron are without change. At a public meeting, held in Edinburgh last week, the General Secretary to the Ironmasters of Scotland gave a lengthened history of their lock-out. This official stated that "Within the past year, 23,000l. had been expended by the Union, not a penny of which had been paid as strike money. They had plenty of funds, and were not likely soon to be crushed. The only way to effect a settlement of the present struggle was by referring the dispute to arbitration or to a conference." The meeting was brought to a close by pledging support to the ironmasters until their case was brought to a successful termination. Notwithstanding this resolution, and the very prosperous state of their funds, the lock-out is all but a thing of the past.

Coals have had to undergo another reduction of 6d. a ton this week, and can now be purchased at 3s. per ton at the pit's mouth, or from 5s. 6d. to 5s. 9d., f.o.b., in the Clyde, or at Port Dundas. This deplorable depression is, to some extent, attributable to the fact that a number of our ironmasters—in the present state of the iron trade—have become coalmasters, and are selling in the ordinary way coals which in more prosperous times would have been all consumed by themselves. In these circumstances, the already too low wages of the collier will have to undergo a still further reduction, if worse calamities are to be averted off; as, we regret to learn, a pretty general feeling prevails amongst coalmasters to still further circumscribe their operations, by shutting up pits in all the mining districts in Scotland, unless the action of the ironmasters to-day prevent it.

While coalmasters are thus puzzled as to how they can keep their hands employed at a loss, miners have this week held meetings at Maryhill, Inchnadamnan, &c., to support members in the district out on strike. Meetings have been held in the Wishaw, Hamilton, Ayrshire, and other districts for a like purpose, but it was needless to fill up the paper with details of this sort. During the week the shipments of coals from the Scotch ports amounted to 16,215 tons, against 11,215 tons in the corresponding week of last year, which shows a considerable increase. There is a continuation of emigration from the Fife, Lanark, and Ayrshire coal districts, but not to any large extent; only some of the most respectable of the class have been persuaded to leave, we are afraid, under false pretences.

At the Glasgow Geological Society various papers of importance were read. Mr. Thomson stated that spines of the *Gyracanthus* occur in the roof of

the "splint" coal at Shettleston, associated with other spines belonging to *Gyracanthus* and *Pleuracanthus*; it also occurs in the same bed at Newton, Cambuslang, along with these spines and with the palae tooth *Pleuracanthus*; and in the Airdrie blackband ironstone he had found it in company with *Megafolius* Hubberti, *Rhizodopsis*, *Rhomboptylus*, and with *Strepsodus*, *Ctenoptylus*, and *Pleurodus*.

Mr. J. Wallace Young read a paper entitled "Miscellaneous Notes on Chemical Geology." In a trap dyke at Fairlie a white crystalline carbonate of iron, lime, and magnesia is found, which contains some very small brownish-black crystals. On separating a small portion of these, and applying suitable tests they were found to consist of sulphide of iron and zinc; no carbonate of zinc was present. A portion of the trap-rock from the dyke itself was tested carefully for zinc, but none was found. Sulphide of zinc is only rarely found, disseminated through such rocks as basalt, dolomite, &c. A deposit from a chalybeate water was described as consisting of hydrated oxide of iron, with a little clay and sand mechanically intermixed. The only peculiarity observable was the absence of lime salts.

#### REPORT FROM DERBYSHIRE AND YORKSHIRE.

MARCH 19.—There is no alteration in the Coal or Iron Trades in the North Derbyshire district, both being characterised by more than usual dullness. The demand for coal to London and the South has fallen off considerably, the quantity sent from Clay Cross for February showing a diminution of 5000 tons when compared with the previous month. At Church Gresley and the district the efforts of Mr. Bass to bring about a settlement between the employers and the men who have been out so long having failed, it would appear as if the latter will have to leave the neighbourhood, seeing that the collieries have as many men as they require.

In the neighbourhood of Sheffield and in South Yorkshire there are indications of improvement at several of the ironworks. At Elsecar the rail-mill has commenced working, whilst the puddlers and others are better employed than for some time past. Most of the furnaces are in blast, so that stocks of iron are large. The demand for coal, both for house and steam purposes, continues very dull. The business doing to London in particular has fallen off considerably, so that most of the collieries, including those of Earl Fitzwilliam, are on short time. To Hull and Grimsby a moderate trade is being done, and rather more from the port of Goole.

An important meeting of the principal colliery owners in South Yorkshire was held on Tuesday, at the King's Head Hotel, Barnsley, for the purpose of taking steps to have the present rate of the Great Northern Railway to London and other places reduced to a point which would enable them to compete with the sea-borne coal, which they were unable to do at present; and the action taken by the coal owners is warmly seconded by the London merchants, who are deeply interested in the matter. It was agreed that the Board of the Great Northern Railway should be communicated with, and it is to be hoped that the present rate will be modified, seeing that, unless such is done, not only the colliery proprietors but the railway itself will be the sufferers. The demand for coke continues good, considering the depressed state of the iron trade, so that stocks are not allowed to accumulate.

At the Oaks Colliery matters remain without much alteration, the men being very busily engaged in clearing the road between the down-cast and cupola shafts, so that there is not much likelihood of any of the bodies being reached for some time to come.

The recent attempt made by Mr. Bass, M.P., to bring the disagreement between the colliers of South Derbyshire and their employers to a termination having failed, for various reasons, it may now be assumed that the men at present out will have to find work in other quarters. At nearly all the collieries at which the lock-outs were formerly employed there were fully as many non-Unionists at work as are required, and in some instances more, so that short time is now pretty nearly the rule throughout the district. For the second time in 12 months, has this been signally defeated in Derbyshire, after causing a great deal of privation and suffering, and sending a great deal of the trade into other districts, and which it will doubtless take months to recover. Since the commencement of the struggle the men must have lost in wages upwards of 25,000l., which would represent coal of the value of more than 100,000l. In addition to the loss of wages thus sustained, several of the Trade Unions have spent large sums of money in the struggle. The most prominent amongst these societies may be mentioned the South Yorkshire Miners' Association, which during the struggle forwarded to Church Gresley upwards of 4000l., and which has been expended without in the slightest degree forwarding the Union movement. It may be said that the only point in dispute was as to the employment of persons at the collieries who were connected with any Union. After the failure to compel the Staveley Company to employ Unionists in their mines, the attempt was made to carry out the principle in South Derbyshire, but the colliery proprietors, amongst whom are the Earl of Chesterfield and the Marquis of Hastings, resolved on no account to employ persons who were members of the Miners' Association. They have now carried out their determination to a successful issue, but at a great loss to themselves, so far as trade is concerned. The dispute may now be said to have terminated, leaving between 300 and 400 men out of work, and whose services are now not required in the district.

STRIKE AND LOCK-OUT AT SALTAIRE.—A late edition of the *Leeds Evening Express* of last night states that, in respect to a strike and lock-out at Saltaire, near Bradford, Mr. Titus Salt, jun., has announced that, having enquired what other firms were doing, his firm was prepared to increase their rates of wages, and that it was probable work would be resumed on Monday morning.

#### EXTRAORDINARY CASE OF MINE TRESPASS.

The following important case was heard at the Staffordshire Lent Assize Court on Saturday before Lord Chief Baron Kelly:—*Fry v. Powell, Q.C., and Mr. H. James* appeared for the plaintiffs (instructed by Mr. Brooke Robinson, Dudley), and Mr. Gray, Q.C., and Mr. Griffiths (instructed by Messrs. Bernard and King, of Stourbridge) for the defendant. The facts of this case were of a very extraordinary character. The plaintiffs are four in number; three of them—Emily Fletcher, Thomas Bell Elocck Fletcher, and John Aston—are devisees and executors of the late Mr. T. Badger, and the fourth—Mr. E. J. Badger, late of the late Mr. T. Badger. The Badgers were a firm of gentlemen who carried on an extensive business as mine owners in the county of Stafford, and some years ago they were possessed of some mines forming the subject of the present action, and called the Old Hill Mines, in the parish of Rowley Regis. The defendant had entered four pleas. First, not guilty; second, mines not the plaintiffs'; third, the coal not the plaintiffs'; fourth, he pleaded the statute of limitations. Adjoining these mines were other mines, belonging respectively to Messrs. Hall, Holcroft, and Co., and the defendant, who were now sought to recover damages was not committed by directly working into the plaintiffs' property; for owing to the position of the mines the defendant had first to cut through that of Messrs. Hall, Holcroft, and Co., and thence into that of the plaintiffs. For the trespass upon the mine of Messrs. Hall, Holcroft, and Co. proceedings were taken, and an action for damages was to have been tried at the Assizes, 1867, but before the case was called on an arrangement was made between the parties, and the action was discontinued. The defendant, however, had been enabled to make the necessary inspection, and he had been asked to show his maps; but he declined to do so, and that rendered necessary an application to a learned Judge in London for an order to inspect the mine, maps, books, &c. That order was also granted, and the defendant so far complied with it that he produced the maps and books; but the former were covered up so that they showed only the fact that the defendant, forming the boundary line between his own and the plaintiffs' colliery. The defendant, however, having worked into the plaintiffs' colliery, the portion of the map exhibited was useless for the purposes of the inspection; and as he refused positively to show anything but the boundary line in question, a second application had to be made to the Judge in London, who peremptorily ordered that the whole of the plans should be open to inspection. That order was granted on Jan. 30 last, but it was only since the opening of the Assizes that it had been complied with, and the plaintiffs had been enabled to make the necessary inspection. Now evidence was laid before the Court to show that since the trespass was first committed the defendant had worked the plaintiffs' mine, in the upper part of the thick coal, to no less an extent than 1659 square yards, 5 yards thick, which represented 3778 tons, and which valued at 8s. per ton, penalty price, amounted to 1319l. 10s. There were left under foot 1809 square yards of bottom coal, which Mr. Henry Johnson, of Dudley, one of the mining engineers who inspected the mine, valued at 12s. per ton, and which would be worth the cost of getting. Of this thin coal it was estimated there was left 4605 tons, and as this may not be worth getting, a claim was also made for the amount of the royalty and profit of 2s. per ton, which amounted to 466l. 10s.

There was another item in plaintiffs' claim of 116l. for injury done to the surface of the land, and to three cottages, making a total claim of 1867l. Mr. Johnson said that on Nov. 1, 1867, he, in company with Mr. David Peacock, of Tipton, and William Turner, went down to ascertain the trespass, but the roof had, he thought, been purposely lowered by the defendant, so that he and his companions as large as that court being completely choked up with the fallen debris, and so entirely prevented the inspection sought. The gentleman who was the defendant's mine surveyor in 1867, Mr. Thomas Millership, jun., distinctly stated in evidence that Mr. Mills asked him not to show on the plans that he had worked beyond his own boundary. Mr. Millership's reply was that he should put his dialling upon the plan just as he found them in the pit, and he appears to have done so. He produced (under his subpoena) the plotting plan of defendant's workings, which showed the trespass of 1659 square yards. He added that he several times remonstrated with the defendant, recommending him not to run the risk of the trespass, as if he was found out it would ruin him. Defendant answered "Oh! it will never be found out;" but Mr. Millership declined to have anything to do with the matter. The defendant told him he did not want him to have anything to do with it, but that he wanted to make the pit last as long as he

could. The witness, at the request of Mr. Powell, read some entries from his note book confirming his previous statement which seemed to astonish both Court and jury. He said the coal taken was of excellent quality and six yards thick. It appeared also that when the inspection of the mine on behalf of Messrs. Hall, Holcroft, and Co. was made, a dam was put up at the entrance to the gateway of the working leading into the adjoining mines in order to conceal the trespass. Witness remembered Mr. Henry Johnson, of Dudley, Mr. Peacock, and Mr. Turner coming down the pit on Nov. 1 last to inspect; but the roof was all in then, and they could not see anything except the "shut" or rock. These were the chief facts of the plaintiffs' case, and to them the only answer made by the learned counsel for the defendant was that he was instructed that Mr. Mills did not admit that the trespass was committed with his knowledge, though he, at the same time, disavowed any intention of imputing that Mr. Millership had stated that which was false. The question, therefore, resolved itself into one of damages. The learned Judge, in summing up the case, significantly remarked that it was one of the most extraordinary and lamentable cases that he had ever heard in a Civil Court, and one that ought to have gone into the Criminal Court. The defendant had furiously and elandestinely—he would not use any other term though he might do so—made his way through the mines of other proprietors into the mines of the plaintiffs, and from thence, in the short space of three or four months, carried off a quantity of coal which, allowing a liberal reduction for expenses, had been estimated at 1319l. 10s. He directed the jury, however, that they must not allow any indignation they might naturally feel at the defendant's conduct induce them to aggravate the damages by 1s.; but he subsequently added (in reply to a question from the jury) that he was bound to tell them in law that the plaintiffs were entitled to the value of the coal at the pit's mouth, and that if they awarded ½d. less they would be doing a great injustice. The jury, after two hours' consultation, returned a verdict for 1665l. 15s., as against 1867l., the amount claimed by the plaintiffs, and in consequence of a letter handed into the Court the Judge ordered execution to issue in four days.

UNFENCED SHAFTS.—A COLLIERY PROPRIETOR FINED 30l.—At the West Bromwich Police Court, on Monday, George Richmond, colliery proprietor, was summoned at the instance of Mr. Baker, Government Inspector of Mines, for having in January last unlawfully left three shafts of coal pits in his colliery in Bromley-lane, Brimley Hill, not properly fenced, so as to be a danger to the public.—Mr. Baker said that the shafts of the pits in question were very improperly fenced, one of them only having a piece of railing over the top of it. The defendant pleaded guilty to the three charges.—Mr. Spooner said the lives of the public had been so endangered by colliery proprietors not fencing the shafts that they did not use that he was obliged to exercise his own jurisdiction very strongly. He knew from his observation that there were many pits now that were not properly fenced round, but they must be so, and it must be done well and properly. He then fined the defendant 10l. in each case.—Mr. Richmond afterwards asked the stipendiary to mitigate the penalty, but he replied that he could not. He had hoped that the fact of one or two cases of a similar character being brought before him would have put a stop to the practice. One gentleman he had fined 50l. for a similar offence. People must use their property so as not to be an injury to others. He would willingly reduce the penalty if he could, but he dared not, for if he did other persons who were brought before him would say that he had reduced Mr. Richmond's penalty, and would ask that theirs might be reduced also.—The 30l. were then paid by the defendant.

AN IMPROVED SAFETY-CAGE.—An invention has recently been patented by Mr. BELLHOUSE, of Rochdale, which consists of an arrangement of wedges, or inclined serrated pieces of malleable iron, capable of sliding between projections on the cage and the ordinary guide-ropes, such wedges being brought into action by means of weighted levers and powerful springs. In case of the breakage of the rope the weighted ends of the levers fall; the serrated wedges are at once pushed up between a wrought-iron stud (which is firmly fixed in a strong wrought-iron angle flange) and the guide-ropes, the result being that the serrated wedges become firmly blocked against the guides, and effectually prevent the further fall of the cage, no matter how heavily laden. The apparatus is so arranged as to be quite under the control of the man inside the cage, for by simply pulling an overhanging chain the descent of the cage can be stopped in a moment.

WOOD AND BAILEY'S PYROMETER.—Mr. WOOD, Tees Ironworks, Middlesborough, has invented a new pyrometer. It is manufactured by Messrs. Bailey and Co., Salford, and is designated, "Wood and Bailey's Patent Pyrometer." The instrument may be briefly described—a metal tube—the metal being especially adapted to the purpose—is connected at one of its ends to a pillar of porcelain. The other end communicates with a chamber in which the degrees of temperature are duly marked. When the instrument is held over the aperture of a blast-furnace pipe, so as to allow the hot air to pass through the tube, the heat causes an expansion of the metal, and the length of the tube is thereby increased. The difference thus made in the length of the metal tube as compared with that of the porcelain pillar causes a corresponding movement in the index upon the face of the dial, and thereby the temperature is indicated. A peculiar feature in the instrument, and one which is of considerable importance in estimating its value, is that should it in course of time become strained by use, the index can readily be re-adjusted and brought to the temperature of the atmosphere by means of a regulating screw which is attached to it near the dial. In the recent trials the instrument registered a rise from 60° to 1200° of temperature in less than a minute.—*Iron Trade Review.*

A manufactory for artificial fuel is about to be established on the banks of Brading Harbour, in the Isle of Wight.

#### WATERWORKS FOR THE CITY OF PEST.

CAST-IRON WATER COCKS are WANTED, from 4 inches to 20 inches in diameter. ALL ENGINEERS and MAKERS, who are WILLING to SUPPLY the Municipality of the City of PEST with the above-described COCKS, are invited to SEND for the PRINTED SPECIFICATIONS, FORMS OF TENDER, and DRAWINGS, to the Oberbürgermeister and President of the "Stadt Wasserkunst Commission," at Pest, on or after the 9th of March, and they are requested to return the tenders, endorsed "Tenders for Cast-Iron Water Cocks," properly filled up and sealed, on or before TUESDAY, the 31st of next MARCH next. Pest, 16th February, 1868. W. LINDLEY.

#### WATERWORKS FOR THE CITY OF PEST.

CAST-IRON WATER PIPES are WANTED from 4 inches to 20 inches in diameter. ALL MANUFACTURERS of WATER PIPES, who are WILLING to SUPPLY the Municipality of the City of Pest with such PIPES, are invited to SEND for the PRINTED SPECIFICATIONS, FORMS OF TENDER, and DRAWINGS, to the Oberbürgermeister and President of the "Stadt Wasserkunst Commission," at Pest, on or after the 9th of March, and they are requested to return the tenders, endorsed "Tenders for Pipes," properly filled up and sealed, on or before TUESDAY, the 31st of MARCH next. Pest, 16th February, 1868. W. LINDLEY.

#### WATERWORKS FOR THE CITY OF PEST.

A STEAM ENGINE is REQUIRED of from 30 to 35-horse power (nominal), for the COMMENCEMENT of the SUPPLY. The ENGINE to be upon the condensing principle and horizontal construction, working three pumps with a fly-wheel, in such manner that the three pumps shall raise the water 50 feet, or the two pumps 75 feet, or the single pump 100 feet. The engine and pumps to be self-contained, and erected upon a strong cast-iron frame. The SUCTION-PIPE to be 20 inches diameter and 25 feet long, properly fitted. The PUMPS to be supplied with proper vacuum and air vessels. There must be TWO STEAM BOILERS, with all proper fittings; each to be amply sufficient to work the engine with a moderate fire. The time being too short to enable makers to supply new models, they are requested to send drawings and descriptions of their make of engine, and of its capabilities, with their tenders. It is requested to state separately the price for the engine, the boilers, and the pumps. The masonry and the foundations for the engine, &c., &c., will be supplied by the City of Pest; the contractor is, however, bound to erect and set to work his engine, boilers, pumps, and to be responsible for the same for three months after the engine is started. One-third of the contract sum to be paid when the contract is closed, the second third when the engine is started, and the remaining third when the three months' trial is passed, and the engineer-in-chief, Mr. W. LINDLEY, certifies that the contract has been completed to his satisfaction. Sealed tenders, endorsed "Tender for Steam-Engine," to be addressed to the Oberbürgermeister and President of the "Stadt Wasserkunst Commission," at Pest, and to be sent in on or before the 31st day of March. The engine to be started on or before the 31st of August, 1868. Pest, 16th February, 1868. W. LINDLEY.

#### PIPE-PROVING MACHINE WANTED.

THE COMMISSION of the CITY OF PEST WATERWORKS REQUIRES A PIPE-PROVING MACHINE. The PIPES to be proved are from 4 inches to 24 inches in diameter; the pressure up to which the machine can prove them must be equal to a column of water 600 feet in height. The machine to be delivered on or before the 31st of May, at the landing quay of the waterworks at Pest, and to be paid for as soon as proved and certified by the engineer-in-chief, Mr. W. LINDLEY. Makers who are prepared to supply a machine of the above description, and to deliver it at the City of Pest, are requested to send their drawings and descriptions, with tender, addressed to the Oberbürgermeister and President of the Waterworks Commission, on or before the 31st of March next. Pest, 17th February, 1868. W. LINDLEY.

COAL CUTTING MACHINERY.—The WEST ARDSLEY COMPANY, having, by recently patented improvements, perfected their coal cutting machinery, worked by compressed air, are NOW READY to MAKE CONTRACTS for the CONSTRUCTION and USE of their MACHINES. The results of twelve months' experience in the working of these machines, by the West Ardsley Company, have proved most satisfactory, their use being found to CHEAPEN the COST and IMPROVE the average SIZE of the COAL, to LIGHTEN the LABOUR, and also to MODIFY the SANITARY CONDITION of the MINE. All communications to be made to Messrs. FIRTH, DONISTHORPE, and BOWEN, No. 8, Britannia-street, Leeds.

NOTICE.—The WEST ARDSLEY COMPANY, having reason to believe that their patents are being infringed upon, hereby give notice that they will TAKE LEGAL PROCEEDINGS AGAINST ALL PARTIES who may MAKE FOR SALE OR USE ANY MACHINERY in the construction of which any such INFRINGEMENT is MADE.



**THE PEMBROKE SLATE COMPANY (LIMITED).**—Notice is hereby given, that it is intended that a GENERAL MEETING of this company will be HELD at the Black Boy Hotel, Long-row, in the town of Nottingham, on FRIDAY, the 3d day of April, 1868, at Four o'clock in the afternoon, to confirm the special resolution which was passed at a general meeting of the company on the 18th day of March, 1868, of which a copy is hereunder written.  
H. E. HUBBART, Liquidator.  
Nottingham, 16th March, 1868.

**COPY OF RESOLUTION.**  
“Resolved,—That no further calls shall be made upon the shareholders, either to equalise their contributions *inter se* or otherwise; and that the balance of money in the liquidator's hands shall be paid over to Mr. Frederick William Parsons upon the execution of a release from him and Mr. William Parsons, who together are the holders of 2000 shares, upon which £1 per share has been paid, and upon which they have a right to be recouped the difference between £1 per share and such smaller sum as may have been paid by the other shareholders.”

**THE ALAMILLOS COMPANY (LIMITED).**—Notice is hereby given, that the HALF-YEARLY GENERAL MEETING of the shareholders in this company will be HELD at this office, on THURSDAY, the 26th inst., at half-past Two o'clock P.M.,—  
To receive the accounts, balance-sheet, with reports from the directors, auditors, superintendents, and mining agents, for the half-year ending 31st December, 1867.  
To elect three directors, two in the place of J. P. Judd and John Taylor, Esqrs., who go out of office by rotation, but who are eligible, and offer themselves for re-election; and one in the place of the late James Crosby, Esq.; Robert Palmer, Esq., who is eligible, offers himself for re-election.  
To appoint two auditors for the ensuing year: John Robinson Peill, Esq., is eligible, and offers himself for re-election; Henry D. Abercrombie, Esq., who is also eligible, offers himself for re-election.  
A copy of the directors', superintendents', and mining agents' reports, and of the balance-sheet and accounts, is forwarded herewith.  
By order of the Board, H. SWAFFIELD, Secretary.  
No. 5, Queen-street-place, Upper Thames-street, March 18, 1868.

**THE LINARES LEAD MINING COMPANY (LIMITED).**—Notice is hereby given, that the HALF-YEARLY GENERAL MEETING of the shareholders in this company will be HELD at this office, on THURSDAY, the 26th inst., at Two o'clock P.M.,—  
To receive the accounts, balance-sheet, and reports of the directors, auditors, superintendents, and mining agents for the half-year ending 31st December last.  
To elect four directors, three in the place of John Addis, William Henderson, and Charles Morris, Esqrs., who go out of office by rotation, but who are eligible, and offer themselves for re-election; and one in the place of the late James Crosby, Esq.; Robert Henty, Esq., who is eligible, offers himself for re-election.  
To appoint two auditors for the ensuing year: Robert Palmer and J. R. Peill, Esqrs., who are eligible, offer themselves for re-election.  
A copy of the directors', superintendents', and mining agents' reports, and of the balance-sheet and accounts, is forwarded herewith.  
By order of the Board, H. SWAFFIELD, Secretary.  
No. 5, Queen-street-place, Upper Thames-street, London, March 18, 1868.

**THE FORTUNA COMPANY (LIMITED).**—Notice is hereby given, that the HALF-YEARLY GENERAL MEETING of the shareholders in this company will be HELD at this office, on THURSDAY, the 26th inst., at Three o'clock P.M.,—  
To receive the accounts, balance-sheet, and reports of the directors, auditors, superintendents, and mining agents for the half-year ending 31st December last.  
To elect four directors, three in the place of Charles Morris, John Phillips Judd, and John Taylor, Esqrs., who go out of office by rotation, but who are eligible and offer themselves for re-election; and one in the place of the late James Crosby, Esq.; Robert Palmer, Esq., who is eligible, offers himself for re-election.  
To appoint two auditors for the ensuing year: James T. Dorrington, Esq., is eligible, and offers himself for re-election; Charles Roberts, Esq., who is also eligible, offers himself for re-election.  
A copy of the directors', superintendents', and mining agents' reports, and of the balance-sheet and accounts, is forwarded herewith.  
By order of the Board, H. SWAFFIELD, Secretary.  
No. 5, Queen-street-place, Upper Thames-street, London, March 18, 1868.

**THE PESTARENA UNITED GOLD MINING COMPANY (LIMITED).**—Notice is hereby given, that the FIRST ORDINARY GENERAL MEETING of the shareholders of this company will be HELD at the City Terminus Hotel, Cannon-street, in the City of London, on MONDAY, the 30th day of March, 1868, at Two o'clock P.M. precisely, to receive the accounts, balance-sheet, and report of the directors, auditor, managing director, and chief captain of the mines.  
To re-elect retiring directors, and for general business.  
The Transfer Books will be closed 23d March, and re-open 6th April, 1868.  
Offices, 9A, Great St. Helen's E.C.  
J. C. GOODMAN, Sec.

**NOUVELLE MONTAGNE COMPANY.**—THE GENERAL MEETING OF THE SHAREHOLDERS will be HELD at the Hotel d'Angleterre, Liege, on SATURDAY, the 18th of April next, at One o'clock P.M.  
The Director-General of the Company,  
V. BOGHE.

**MOSQUITO AND POYASIAN LAND SECURITIES.**—At a PUBLIC MEETING of HOLDERS of these SECURITIES, held pursuant to notice on the 12th March, at 4, Westminster-chambers,  
WM. PAGDEN, Esq., in the chair,  
The following resolutions were passed unanimously:—

- 1.—That this meeting has heard with much satisfaction that there is reason to expect from the Government of Honduras a concession of land in that Republic on favourable conditions, and fully recognises the necessity of being prepared to take advantage of such concession at the earliest moment.
- 2.—That it is desirable that steps should be immediately taken to ascertain to what extent the holders of Mosquito Land Securities will be disposed to avail themselves of any agreement which shall be entered into with the Republic of Honduras, and that the benefits of such agreement, or concession, shall be limited to such holders as shall on or before May 12 next deposit with Captain Bedford Pim, R.N., at the offices of the Central American Association, 4, Westminster-chambers, their claims or securities.
- 3.—That Captain Bedford Pim, R.N., is hereby requested and authorised to investigate the various claims and securities, and to determine the number of acres to which each claimant is respectively entitled in virtue of his claim or security, and which decision of Captain Bedford Pim shall be binding and final, and without appeal.
- 4.—That in place of claims and securities brought in for registration, the Central American Association is hereby requested to issue certificates in the following form, under the seal of that company:—I, Capt. Bedford Pim, R.N., Chairman of the Central American Association (Limited), do hereby, in virtue of a resolution of a public meeting of the holders of Mosquito Land Securities, held on March 12, 1868, award and certify that the holder of this certificate is entitled to a claim of — acres of land in the original Mosquito Land Grants.
- 5.—That a subscription of 1s. 6d. per 1000 acres shall be paid at the time of taking up the certificates of award, the same to be paid to the credit of the committee.
- 6.—That all claimants who shall not have paid the said subscription of 1s. 6d. on or before June 1, shall be excluded from all participation in the benefits of the grants from the Honduras Government.
- 7.—That a meeting of the certificate holders shall be called (of which due notice shall be given), at which a committee shall be appointed to organise a company or association for giving due effect to any provisional agreements which shall be entered into by the existing committee with the Government of Honduras.

Now, NOTICE IS HEREBY GIVEN, that FORMS OF DEPOSIT AND REGISTRATION can be obtained at 4, Westminster-chambers, S.W., on personal application, or will be forwarded by post on receipt of a stamped envelope.  
C. FOX SMITH, Hon. Sec.

**SPECIAL NOTICE TO GOLD MINERS.**—Laurencetown, Feb. 25, 1868.  
On the 12th inst. we had 7½ tons of quartz from a vein west of Gold Lake, in the Laurencetown District, Nova Scotia, crushed at a mill at Montague, owned, as we are informed, by Carlos Pierce and others (who is now operating in this district in company with W. T. Townsend, G. B. Capel, and others). We received as the gross yield 1 oz. 13 dwts. 9 grs. retorted gold.  
On the 26th inst. we had crushed at the mill of John Werner, Esq., Laurencetown, 1½ ton from the same vein, but apparently much inferior in richness, and received as the gross yield 1 oz. 7 grs. smelted gold, a difference of more than four to one against the Montague mill.  
STRANGE AND GLASSON.  
P.S.—Should the Hon. the Commissioner of Mines think proper to make formal enquiry into the disparity between the returns of the two lots, we are prepared to furnish the names of experienced miners who quarried and handled the rock, with their estimates of its value.—S. AND G.

Will be ready by the end of this month,  
THE THIRD EDITION, SEVENTH THOUSAND,  
**HOPKINSON'S "CONVERSATIONS ON MINES," BETWEEN**  
“FATHER AND SON.”  
Revised, improved, and enlarged. Price 2s. 6d., or 3s. stamps, free by post.  
London: MINING JOURNAL OFFICE, 26, Fleet-street.

**THE GOLD MINES OF NOVA SCOTIA.**  
UNDER SPECIAL PATRONAGE.  
Now ready, price 4s. 6d.,

**A POPULAR GUIDE, OR HANDBOOK, FOR TOURISTS, MINERS, AND INVESTORS, INTERESTED IN THE GOLD MINES OF NOVA SCOTIA.**  
Author of “Cosmopolite's Statistical Reviews,” &c., &c.  
Copies can be had at the MINING JOURNAL OFFICE, 26, Fleet-street, London

**PEAT, PEAT FUEL, AND PEAT CHARCOAL, HOW TO MANUFACTURE ECONOMICALLY.**  
By WILLIAM ELSAM.  
(Late Manager of the Blaen Pellaen Peat Charcoal Works).  
Gratis on application to—  
Elsam and Co., 28, Upper Thames-street, London; 44, High-street, Bristol.  
WILLIAM ELSAM, Palmerston Villa, Knowle, Bristol.  
Or forwarded on receipt of stamp and address.

In the Court of the Vice-Warden of the Stannaries,  
Stannaries of Cornwall.

**IN THE MATTER OF THE COMPANIES ACT, 1862, and of the WHEAL HARTLEY MINING COMPANY.**—ALL CREDITORS or CLAIMANTS of the ABOVE COMPANY who have not received notice from the Registrar of the said Court that their claims have been already admitted, are hereby REQUIRED TO COME IN AND PROVE THEIR SEVERAL DEBTS OR CLAIMS at the Registrar's Office, Truro, on Tuesday, the 31st day of March instant, at Eleven o'clock in the forenoon, or in default thereof they will be EXCLUDED from the BENEFIT of ANY DISTRIBUTION made before such proof. And for the purpose of such proof they are either to attend in person or by their solicitors or competent agents, or (unless such attendance be required by the Registrar's summons) they are to send affidavits of their several debts or claims to the Registrar of the Court at Truro, such affidavits being sworn either before some Commissioner of the said Court or before any Court, Judge, Justice, or any Commissioner of one of the Superior Courts lawfully authorised to take and receive affidavits and affirmations.  
WM. MICHELL, Registrar of the above-named Court, Truro, Cornwall.  
Dated Registrar's Office, Truro, March, 1868.

In the Court of the Vice-Warden of the Stannaries,  
Stannaries of Cornwall.

**IN RE NORTH ROSKEAR MINE.**  
**TO BE SOLD,** pursuant to an Order made in a Cause Field v. Harthill and Others, dated the 24th day of December, 1866, at the Registrar's Office, at Truro, on Wednesday, the 25th day of March instant, at Twelve o'clock at noon precisely,  
1 (698th) PART or SHARE of the defendant, John Harthill; and  
1 (698th) PART or SHARE of the defendant, Thomas Wilson,  
Of and in the said MINE.  
HODGE, HOCKIN, AND MARRACK, Truro  
(Agents for Rodd and Cornish, Plaintiff's Solicitors, Penzance).  
Dated Registrar's Office, March 18, 1868.

**QUELLYN SLATE QUARRY, NORTH WALES.**

**TO BE SOLD, BY PRIVATE CONTRACT, the LEASE of the QUELLYN QUARRY.** It is situated about eight miles from CARNARVON, on the road to BEDDLEBERT.  
The works have been in operation about four years, during which time a great amount of preparatory work has been done, and so far as the quarry has been opened, it promises to be a first-class investment. The slate is of good quality, of a beautiful blue colour, without any spots or stripes, and the cleavage is excellent. There is a never-failing supply of water, which may be made available for working the quarry on the lower levels. There is also good tipping ground for the rubbish. During the last six months, although only a limited number of men have been employed, nearly 100,000 slates have been made, specimens of which may be seen at Carnarvon.  
The lease is dated July 9, 1864, and is for a term of 30 years, with power of renewal for 30 years, on payment of one year's royalty for such renewal. The dead rent is £10 per annum, and the royalty 2s. per ton on all marketable slates. The working plant may be taken at a valuation.  
For further particulars, apply to Messrs. JOURN CLAY and WILLIAM CARFORTH, 20, Cow-green, Halifax, or to Mr. EDWARD HUMPHREYS, Royal Hotel, Carnarvon.

**MACHINERY AND BRICKMAKING.**

**MACHINERY AND PLANT FOR SALE.**—  
THREE 16-horse power STATIONARY WINDING ENGINES, with drums and gearing complete, Cornish boilers.  
ONE 6-horse power PORTABLE ENGINE, with link-reversing motion, and 4-ft. drum, and spur gearing to work same.  
ONE 9-horse power WINDING ENGINE, vertical boiler, drum 2 ft. 6 in. diameter, has jib attached, and can be worked as a steam crane. Spare drum, 5 ft. 6 in. long, 3 ft. 6 in. diameter.  
TWO 18-horse power STATIONARY ENGINES and Cornish boilers.  
FOUR STEAM CRANES.  
SIX 20-horse power PORTABLE ENGINES.  
TEN smaller PORTABLE ENGINES, 16 to 6-horse power.  
TWELVE MORTAR MILLS.  
TEN BRICKMAKING MACHINES.  
THREE CLAY-CRUSHING MACHINES.  
THREE CLAYTON'S BRICK PRESSES.  
TWO (6000 gallons) wrought-iron WATER TANKS.  
SIX (1200 to 1800 gallons) wood TANKS.  
12,000 feet run IRON WHEELING PLATES.  
300 off-bearing and crowding BARROWS.  
1400 dozen HACK CAPS.  
50 tons KILN DOORS and FIRE-BARS.  
Price and particulars of—  
MR. FIRBANK,  
MIDLAND RAILWAY, HAVERSTOCK HILL, LONDON, N.W.

**FOR SALE, BY PRIVATE CONTRACT, SPARE MACHINERY, &c., viz:—**  
ONE 80 in. cylinder PUMPING ENGINE, with THREE BOILERS and balance-bob, &c., complete.  
ONE 72 in. cylinder PUMPING ENGINE (Bull), with TWO BOILERS, &c.  
ONE 24 in. cylinder WINDING ENGINE, BOILER, cage, &c.  
ONE 26 in. cylinder WINDING ENGINE, TWO BOILERS and steam capstan attached.  
ONE 36 in. cylinder STAMPING ENGINE, BOILER, &c., with east-iron axle for 60 heads, nearly new; 14 ft. calciner, complete.  
Between 300 and 400 first-rate PUMPS from 6 to 20 inch, with windbores, matchings, H pieces, &c., &c.; 14 plunger poles from 7 to 20 in., with stuffing boxes and glands to fit.  
A quantity of hammered iron rod plates, rod pins, staples and glands, &c.; a quantity of pitch pine and other main rods from 10 to 15 in.; 2 capstans and 3 shears; capstan rope, chains, and a variety of other articles.  
For viewing the same, apply to the Agents.  
Further particulars may be had of Mr. WM. POLKINGHORNE, the purchaser at the mine; or of WM. WEST, Esq., C.E., Tredegar House, St. Blaizey.  
Dated Par Consols Mine, Par Station, Cornwall, 21st November, 1867.

**TO MECHANICAL ENGINEERS, AND OTHERS.**  
**FOR SALE, on advantageous terms, the SURPLUS STOCK of SPARE CASTINGS, suitable for ROLLING MILLS, PIT-WINDING GEAR, and other heavy work, consisting of SPUR and BEVEL WHEELS of various diameters and pitches, and CAST-IRON SHAFTING, the whole being of the best material, having been intended for use at the undermentioned works, at which they were cast.**  
Apply to the Manager, BLAINE AND CWM CELYN IRONWORKS, near Newport, Monmouth.

**TRAMPLATES.**  
**FOR SALE, in lots, to suit purchasers, TWO HUNDRED TONS of SECONDHAND CAST-IRON TRAMPLATES, with GUIDE PLATES, CROSSINGS, SLEEPERS, and all requisites for a complete tramroad. Also about FIFTY TONS of NEW WROUGHT-IRON TRAMPLATES, with cast-iron SLEEPERS; and TWO HUNDRED PAIRS of NEW WHEELS (with or without axles) for COAL TRAMS.**  
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**TO WHARFINGERS, MERCHANTS, AND OTHERS.**  
**VALUABLE PROPERTY IN SWANSEA FOR SALE.**  
**TO BE SOLD, BY PRIVATE CONTRACT, all those VALUABLE COPPER ORE YARDS AND WHARFS, situate at Swansea, in the county of Glamorganshire, formerly in the occupation of Messrs. Williams, Foster, and Co., and of the late Sir William Williams, Bart.**  
These premises are well adapted for the carrying on an extensive business either in coal, timber, or any other kind of merchandise, suitable to the flourishing town of Swansea. There is a powerful crusher, and every other appendage necessary for the very extensive business which has been carried on there for a series of years as copper ore wharfs.  
To treat for the same, apply to Mr. FRANCIS PRYOR, Claremont, Redruth; and for all further information to Messrs. SMITH, ROBERTS, and PATER, Solicitors, Truro.—Dated Claremont, Redruth, March 9th, 1868.

**SLATE QUARRY TO BE SOLD OR LET.—A PROPRIETOR of a SLATE QUARRY is DESIROUS to SELL or LET it to a company, reserving a certain number of shares. It was first discovered twelve months ago, and about ninety thousand slates have been made since September last. It is situated on a hill side, with an incline to a railway and a turnpike-road, the distance being about 400 yards. The stone is of good metal, with good cleavage.  
The quarry has unusual facilities, having a deep pit for the rubbish outside, with natural floors, and joints in the rock—thus rendering the working of it comparatively inexpensive.  
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**TO BE LET, on such terms as may be agreed upon, the GLENMALUR LEAD MINE, in the townland of BALLINAFUNCHOG, barony of BALLINACOR NORTH, and county of WICKLOW.**  
The mine is situate on the east side of the valley of Glenmalur, about eight miles from the town of Rathfriland, in a mineralised district of great promise. It has been worked for a considerable time up to a recent period, and was very productive. A large water-wheel, connected with a pumping apparatus, is at present employed keeping the workings clear of water. A railway is laid through, and in the adit level. Abundant supply of water power is available from the Avonbeg River adjoining, and other sources. Timber for use of the mine can be obtained on advantageous terms on the grounds. Houses suitable for the superintendents and workmen, offices, and workshops, are on the premises, and land can be given for any further accommodation that may be necessary.  
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**MAC ADAM BROTHERS AND CO., ENGINEERS, SOHO**  
FOUNDRY, BELFAST, after twenty years of experience, have brought  
their IMPROVED TURBINE to great perfection.  
It is applicable to all practicable heights of fall, giving much greater power  
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On low falls it has the great advantage of not being impeded by floods or  
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It is particularly well adapted for situations where the quantity of water is  
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Its motion is extremely regular, and, when desired, a governor can be ap-  
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The wheel is at work in a great many places, to which reference will be given.

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**BLASTING POWDER,**  
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**MESSRS. WEBB AND CO., CARNARVON,**  
Sole consignees from the patentee.

This powerful **BLASTING AGENT** will not explode from a spark, or concuss  
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Force, SEVEN TIMES that of the BEST GUNPOWDER.  
It will shiver to pieces cast or wrought-iron, or the toughest oak timber. No  
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TIMES that of GUNPOWDER, and the ECONOMY and SAVING in  
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Wire rope ditto, free from acid, 15s. per cwt. Liquid ditto (between thick and  
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COPPER-SPOUTED QUART LAMPS, &c.; TORCH WICK for ditto, 6d. per lb.  
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We shall be glad to furnish a detailed price-list on application.  
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Preference will be given to ADIT LEVELS and those places where ROTA-  
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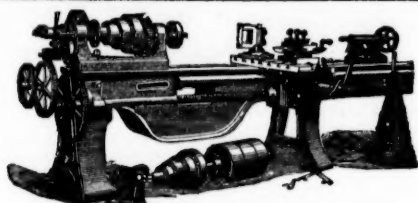
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Of every description, new and secondhand,  
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NO CORNISH or LANCASHIRE BOILERS should now be MADE without having the FLUES STRENGTHENED by means of these TUBES. They effect a considerable saving in fuel, increase the quantity of steam, and also improve the circulation, thus preventing priming, &c.

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Repairing in all its branches promptly attended to.

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THE MINING JOURNAL.

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Samples and prices can be obtained on application to the company; or to any of their recognised agents.

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These consist in DOING AWAY WITH THE MALE SCREW ON BORING RODS, and, by their patented arrangements, DIMINISHING THE RISK OF BREAKAGE, and RENDERING REPAIRS EASY. For prospectuses, apply to—

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Estimates given for obtaining water and boring for minerals.

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For Single Cylinder Portable Steam Engine,—THE FIRST PRIZE OF £25.

For Double Cylinder Portable Steam Engine,—THE FIRST PRIZE OF £25.

For Horizontal Cylinder Fixed Engine,—THE FIRST PRIZE OF £20.

For Double Blast Finishing Threshing Machine,—THE PRIZE OF £15.

Also, THE SOCIETY'S SILVER MEDAL for Adjusting Blocks for Machines;

PARIS EXHIBITION, 1867, GOLD MEDAL.

The duty performed by all CLAYTON, SHUTTLEWORTH, and Co.'s Engines on this occasion considerably exceeded that of any others, and has never been equalled at ANY of the trials of the Society. CLAYTON, SHUTTLEWORTH, and Co. refer with pleasure to the fact that the duty of their "Commercial" or single valve engine at Chester, so long ago as 1858, was not equalled by any "ordinary" Engine at Bury.

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### PATENT FLEXIBLE TUBING, AND BRATTICE CLOTH FOR MINES

MANUFACTURED BY

### ELLIS LEVER,

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### APPLEBY BROTHERS,

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Engineers and Patentees of STEAM CRANES, DONKEY PUMPS, &c.



BARROW LIFT.

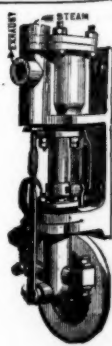
HOISTING, OR DECK

ENGINES.

### PATENT DONKEY PUMPS.

Nos.	1	2	3	4	5	6	7	8	9
Diam. of ram	1½ in.	2 in.	2½ in.	3 in.	3½ in.	4 in.	4½ in.	5 in.	6 in.
*Gall. per hour	240	400	680	850	1200	1600	2100	2600	3800
Approx. H.P.	15	25	40	50	80	95	130	160	230
Single-acting price	£10 5s.	£12 10s.	£15	£18	£24	£28	£33	£38	£50
Double-acting do.	11 10s.	14 0s.	17	20	24	28	33	38	50
Double-acting pump on base plate	12 10s.	15 0s.	18	21	25	30	35	40	50

\* Calculated at 200 strokes per minute.





IMMENSE SAVING OF LABOUR.

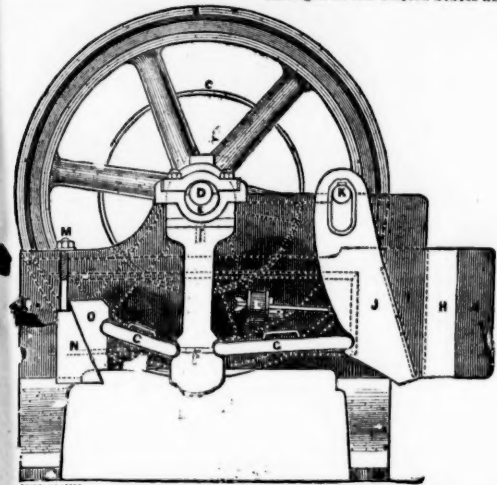
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# BLAKE'S PATENT STONE BREAKER,

OR ORE CRUSHING MACHINE,

FOR REDUCING TO SMALL FRAGMENTS ROCKS, ORES, AND MINERALS OF EVERY KIND.

It is rapidly making its way to all parts of the globe, being now in profitable use in California, Washoe, Lake Superior, Australia, Cuba, Chili, Brazil, and throughout the United States and England. Read extracts of testimonials:—



*The Parys Mines Company, Parys Mines, near Bangor, June 6.*—We have had one of your stone breakers in use during the last twelve months, and Captain Moreom reports most favourably as to its capabilities of crushing the materials to the required size, and its great economy in doing away with manual labour.

For the Parys Mining Company, JAMES WILLIAMS.

H. R. Marsden, Esq.

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H. R. Marsden, Esq.

THOS. GOLDSWORTHY & SONS.

*Alkali Works, near Wednesbury.*—I at first thought the outlay too much for so simple an article, but now think it money well spent.

WILLIAM HUNT.

*Welsh Gold Mining Company, Dolgelly.*—The stone breaker does its work admirably, crushing the hardest stones and quartz.

WM. DANIEL.

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## CAUTION!

# BLAKE'S PATENT STONE BREAKER,

In Chancery.

BLAKE v. ARCHER, NOVEMBER 12, 1867.

His Honour the Vice-Chancellor WOOD having found a VERDICT in FAVOUR of the PLAINTIFFS in the above Cause, establishing the VALIDITY of BLAKE'S PATENT, and made a DECREE for an INJUNCTION to RESTRAIN the DEFENDANTS, Messrs. THOMAS ARCHER and SON, of Dunston Engine-Works, near Gateshead-on-Tyne, from INFRINGING such PATENT, and ordering them to pay to the Plaintiffs the costs of the Suit.

ALL PERSONS are hereby CAUTIONED against MANUFACTURING, SELLING, or USING any STONE BREAKERS similar to BLAKE'S, which have not been manufactured by the Plaintiffs. Application will forthwith be made to the Court of Chancery for INJUNCTIONS AGAINST ALL PERSONS who may be found INFRINGING BLAKE'S PATENT after this notice.

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are made in sizes varying from 2 ozs. to any required capacity, and are marked by the quantity of kilogrammes they will contain; thus No. 100 will contain 100 grammes. In shape, but correspond in all other respects with A, and are similarly marked. are marked in English pounds—thus, a crucible marked 60 will contain 60 lbs. are made expressly for steel in various sizes.

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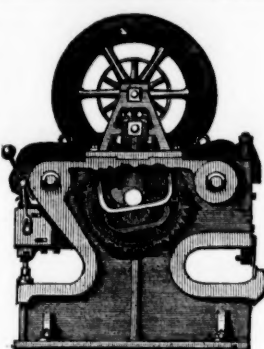
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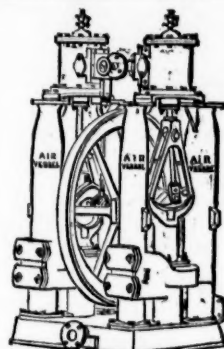
Obtained the PRIZE MEDALS at the "ROYAL EXHIBITION" of 1851; at the "INTERNATIONAL EXHIBITION" of 1862, in London; at the "IMPERIAL EXPOSITION" held in Paris, in 1855; at the "INTERNATIONAL EXHIBITION," in Dublin, 1865; and at the "UNIVERSAL EXPOSITION," in Paris, 1867.



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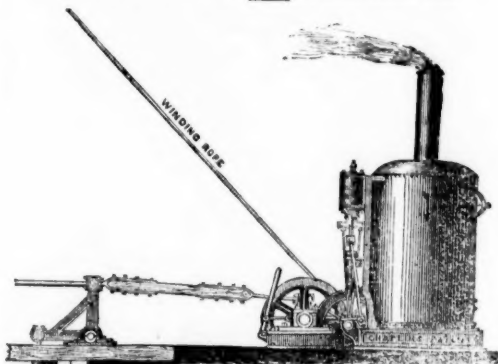


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